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THE RACES AND PEOPLES OF EUROPE

by

BERTIL J. LUNDMAN

TRANSLATED FROM THE GERMAN BY
DONALD A. SWAN

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About the Author

Dr. BERTIL J. LUNDMAN, Professor of Physical Anthropology at the University of Uppsala (Sweden), is one of Scandinavia's foremost anthropologists.

He was born in Sweden in 1899 and educated at the University of Uppsala, where he has spent his entire academic career. Professor Lundman graduated from Uppsala in 1925 with a B.Sc. degree for his work in botany and geography. While working in these fields, he turned his attention to the study of geology, archaeology, ancient languages, and theology. As a result of his theological studies, he published several works on Swedish religious geography, and in 1935 he was awarded a B. Div. degree by the University of Uppsala.

Dr. Lundman's findings in these various sciences led to his interest in physical anthropology, and in the early 1930's he had already begun extensive field studies of the physical anthropology of central Sweden. In the course of this broad-scale field study, Professor Lundman personally took anthropometric measurements of more than 15,000 persons. He summed up his findings of this study in a dissertation on the physical anthropology of the Swedish province of Dalecarlia. After a delay caused by World War II, Dr. Lundman was given a Ph.D. by the University of Uppsala for this work.

Since the end of World War II, Professor Lundman has carried out investigations in several other Swedish provinces, which have added considerably to the present-day knowledge of the biology and physical anthropology of the Swedes, Lapps, and Swedish Gypsies. In 1947 he was appointed Associate Professor of Physical Anthropology at the University of Uppsala.

Dr. Lundman, who is associated with various scientific and anthropological societies in Sweden, is an honorary

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member of such groups in Germany, Italy, and the United States. He is the author of more than 150 articles and monographs dealing with physical and cultural anthropology, ethnology, sociology, eugenics, zoology, botany, geography, ethics and church history. He is also the author of a number of books, including the following:

1. *Nordens Rastyper* (The Racial Types of the Nordic Countries) (1940)
2. *Sveriges Religiösa Geografi* (The Religious Geography of Sweden) (1942)
3. *Jordens Människoraser och Folkstammer* (The Physical Races and Ethnic Groups of the World) (1943)
4. *Dala-allmogens Antropologi* (The Physical Anthropology of Dalecarlia) (1945)
5. *Raser och Folkstockar i Balto-Skandia* (Physical Races and Ethnic Groups in the Baltic and Scandinavian Countries) (1946)
6. *Nutidens Människoraser* (The Living Races of Man) (1946)
7. *Umriss der Rassenkunde des Menschen in Geschichtlicher Zeit* (Outline of the Racial History of Man in Historical Times)
8. *Stammeskunde des Menschen in Geschichtlicher Zeit* (The Physical, Linguistic, and Ethnic Races of Man in Historical Times) (1961)
9. *Geographische Anthropologie* (Geographical Anthropology) (1967)

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I

THE DISTRIBUTION OF ANTHROPOLOGICAL TRAITS IN EUROPE

GEOGRAPHY AND HISTORY are critical factors in the ethnogenesis of the living peoples of Europe. Some of these groups consist of hypotheses, which would lead too far afield to substantiate more precisely at this time. This work will above all deal with the anthropological relations in Europe at the time of the beginning of industrial civilization. This is the only somewhat static epoch about which we possess extensive knowledge. From this point we shall go back to the time of the first expansion of the Indo-European peoples. However, it is hardly possible to go back further in time.

In terms of natural geography Europe forms an appendage of the Eurasian continent. However, we can still not deny the great independence which our part of the world possesses when viewed from a purely anthropological standpoint. For Europe was and is up to our time the dwelling place of the bulk of the White or Europid race and for most of its pronounced subraces. To the south the region of the predominantly Europid race extends approximately to the northern

border of the Sudan savannah. East of the Nile river, however, the racial boundary is very indistinct. In Asia Europid races fill up all of southwest Asia and predominate also in the north of western India—becoming rarer about the northern Deccan region and around the lower Ganges region.

East and north of these areas begins the predominance of the Mongolid races. The Mongolids dominate also in the steppes of southeasternmost Russia to the lower reaches of the Volga river and up toward the Ural mountains. From here on the racial boundary is likely to pass between the still predominantly Europid Volga Finns and the predominantly Mongolid Voguls, Ostiaks, and Samoyeds. It then reaches the European Arctic Ocean somewhat south of the mouth of the Pechora river.

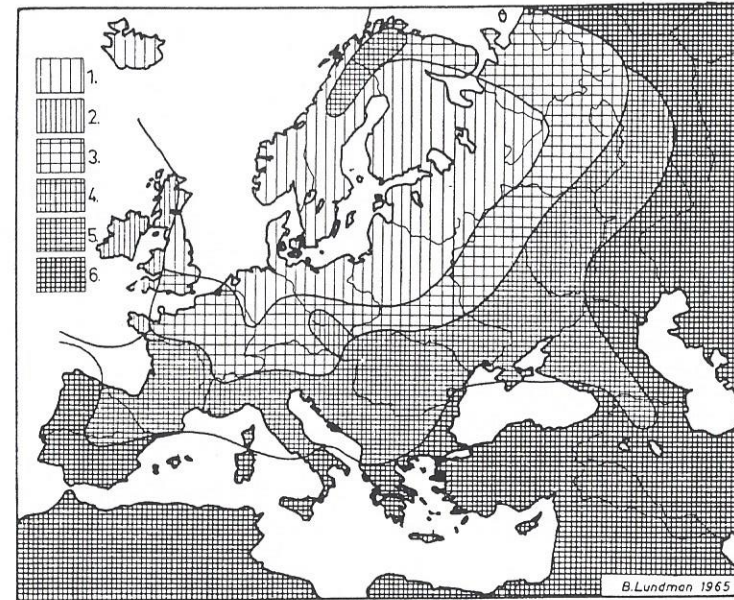
Herewith we have delineated the predominant Europid region in the Old World. Within this region are found only a few small non-Europid enclaves. One of these is the tiny predominantly Mongolid Pussta region of Hungary—and also the region north of the Azov Sea in the Ukraine. There are in addition a few no less interesting smaller predominantly Negrid regions in the Sahara, and now also in the Atlas mountain region of Morocco.

Pigmentation—Skin Color, Hair Color, and Eye Color

The difference between these Europid races in Europe and the other races of the world is among other traits in the skin. The difference is, however, more in the nature of the skin and less in its color. Skin color varies among different national groups in Europe from rosy-white to rather dark-brown. The latter color is already somewhat darker than among some of the so-called colored races. In addition, there are millions of much darker-skinned, but clearly Europid, peoples in India and also South Arabia.

The thick- and dense-skinned yellow and red race shows no *strong* change in skin color in its vast and varied range of distribution. The Negro has become more or less black

in skin color. But among the Europids pigmentation has been extensively adapted to the existing milieu. Map 1 shows the distribution of eye color and hair color in Europe. The six zones range from light-mixed hair and light eyes in England, Scandinavia, north Germany and Poland, the Baltic States, and northwest Russia to dark hair and dark eyes in Portugal, south Spain, south Italy, and Greece.

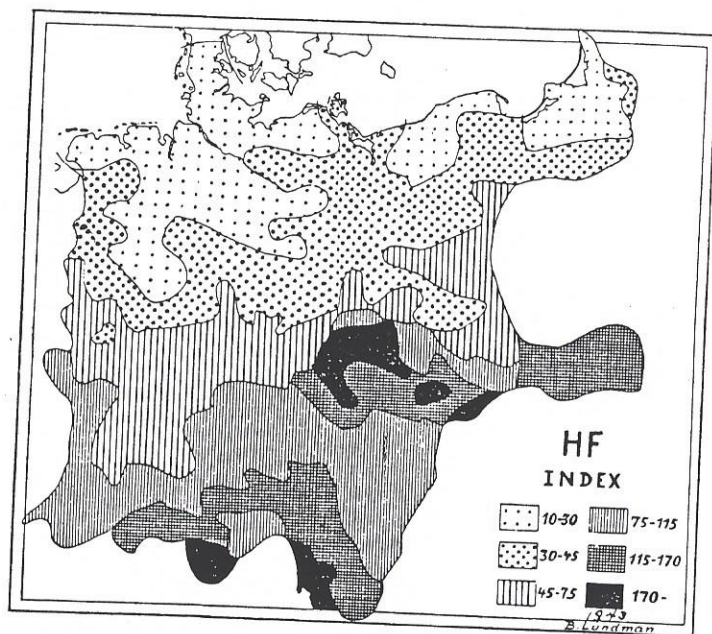


MAP 1 THE DISTRIBUTION OF HAIR COLOR AND EYE COLOR IN EUROPE (LUNDMAN, 1963—ACCORDING TO RIPLEY, 1900 AND STRUCK, 1922).

- 1. Light-mixed hair and light eyes.
- 2. Dark-mixed hair and light eyes.
- 3. Light-mixed hair and light-mixed eyes.
- 4. Dark-mixed hair and light-mixed eyes.
- 5. Dark-mixed hair and dark-mixed eyes.
- 6. Dark hair and dark eyes.

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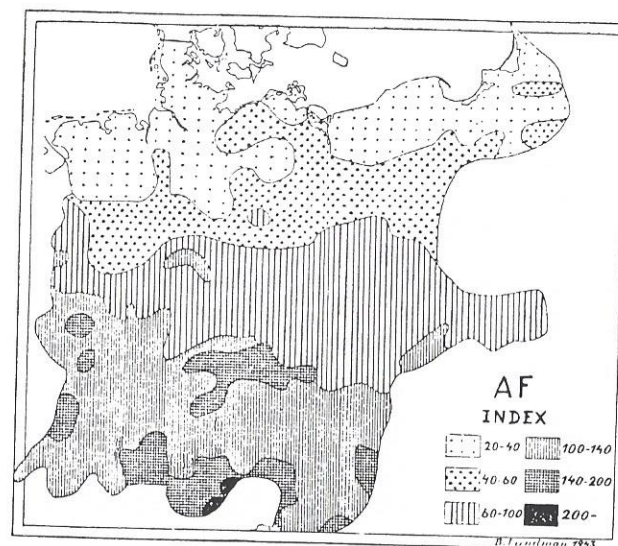
Maps 2 and 3 show the distribution of hair color and eye color among school children in Central Europe. The maps were compiled by the author from the original reports of the



MAP 2. THE DISTRIBUTION OF HAIR COLOR IN CENTRAL EUROPE (LUNDMAN, 1943—ACCORDING TO THE REPORTS OF THE GREAT "CENTRAL EUROPEAN SCHOOL CHILDREN INVESTIGATION" BY VIRCHOW, 1876; KOLLMANN, 1881; SCHIMMER, 1884; AND OTHER SOURCES). Hair Color Index (Haarfarbe Index) = Number of dark-haired school children per 100 light-haired school children.

great "Central European School Children Investigation" by Virchow (1876), Kollmann (1881), and Schimmer (1884). The Hair Color Index indicates six zones in Central Europe. These range from two very light-haired regions in northwest and northeast Germany, where the number of dark-haired

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MAP 3 THE DISTRIBUTION OF EYE COLOR IN CENTRAL EUROPE (LUNDMAN, 1943—ACCORDING TO THE ORIGINAL REPORTS OF THE GREAT "CENTRAL EUROPEAN SCHOOL CHILDREN INVESTIGATION" BY VIRCHOW, 1876; KOLLMANN, 1881; SCHIMMER, 1884; AND OTHER SOURCES). Eye Color Index (Augenfarbe Index) = Number of dark-eyed school children per 100 light-eyed school children.

children is 10 to 30 per 100 light-haired children, to two very dark-haired regions in the Sudeten and Alpine Mountains, where the number of dark-haired children is 170 or more per 100 light-haired children.

The Eye Color Index also indicates six zones in Central Europe. These range from two very light-eyed regions in northwest and northeast Germany, where the number of dark-eyed children is 20 to 40 per 100 light-eyed children, to a small very dark-eyed area in the southern Alps, where the number of dark-eyed children is 200 or more per 100 light-eyed children.

The great culture capability of the European peoples, especially the North Europeans, can possibly find its explanation in part—even if only indirectly—in their particularly good adaptation to the cool-damp type of climate. This type of climate is in certain respects especially culture-furthering, for example, for life in the study room and also in work shops. We can also assume with the greatest certainty that the most strongly depigmented Europid races originated in the cool-damp northwest part of the continent. They did not originate in very great distance from this region, namely, east of the Baltic shield. Here the climate in all periods of climate-change immediately before and during the last Ice Age was probably too sunny for blond persons.

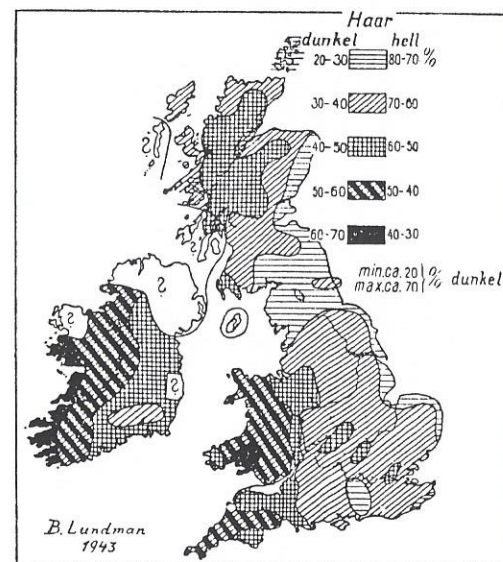
Consequently, the alpine and subarctic regions with their strong summer solar radiation—and also the reflection of sunlight from glaciers and snow surfaces—are less suited for lightly pigmented individuals. Modern polar expeditions, for example, do not like to take along blond persons. Again one also observes a slight increase in pigmentation somewhat north of a line that can be drawn through the Valdai Hills (Russia), Estonia, central Sweden, and south Norway. A similar increase in pigmentation is also observable in many mountain regions.

In many places in north Russia, up to the Kola peninsula, the increase in pigmentation finds its explanation in late and secondary migrations of eastern, or more or less, Mongolid groups. These groups are physically, and also culturally, especially adapted to these cold regions. In comparison, the dark Scandinavian Lapps are certainly completely Old Europid in origin. They have also been in their present region for a very long time. The Lapps, therefore, are even more deeply pigmented.

The dark coloring of the iris is also a protection against too strong solar radiation. However, the coloring of the hair—as far as can be estimated up to the present time—is of less importance. It is of interest that the populations of the dampest, for the most part oceanic, regions of Europe—namely, the western areas of Great Britain and Ireland—

show a much darker pigmentation of the hair than of the skin and eyes.

Maps 4 and 5 show the distribution of hair color and eye

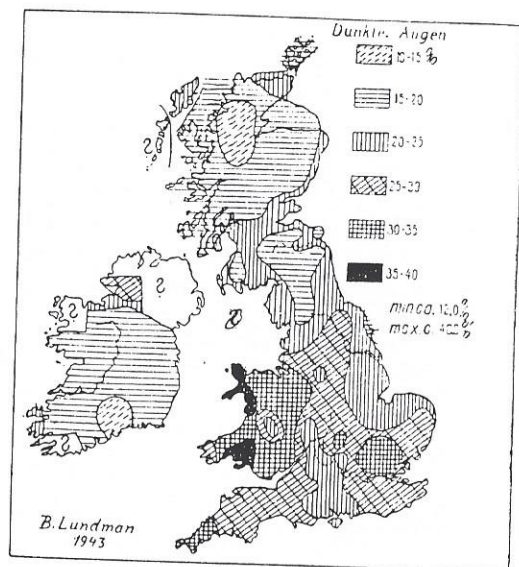


MAP 4 THE DISTRIBUTION OF HAIR COLOR IN GREAT BRITAIN AND IRELAND (LUNDMAN, 1936—ACCORDING TO THE TABLES COMPILED BY BEDDOE, 1885).

- = 20 to 30% dark-haired.
- ▨ = 30 to 40% dark-haired.
- ▩ = 40 to 50% dark-haired.
- ▤ = 50 to 60% dark-haired.
- = 60 to 70% dark-haired.

color in Great Britain and Ireland. The maps were compiled by the author from the data published by Dr. John Beddoe in his classic work *The Races of Britain* (1885). The map indicates five zones of hair color. These range from a light-

THE RACES AND



MAP 5 THE DISTRIBUTION OF EYE COLOR IN GREAT BRITAIN AND IRELAND (LUNDMAN, 1936—ACCORDING TO THE TABLES COMPILED BY BEDDOE, 1885).

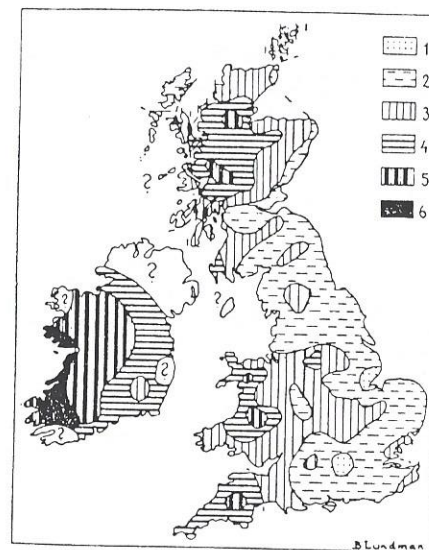
- ▨ = 10 to 15% dark-eyed.
- ▤ = 15 to 20% dark-eyed.
- ▥ = 20 to 25% dark-eyed.
- ▦ = 25 to 30% dark-eyed.
- ▧ = 30 to 35% dark-eyed.
- ▨ = 35 to 40% dark-eyed.

haired region (20 to 30% dark-haired) along the east coast of England and Scotland and extending throughout Yorkshire and Northumbria to two dark-haired regions (60 to 70% dark-haired) in south Wales and along the west coast of Ireland. Eye color is distributed into six zones. These range from two very light-eyed regions (only 10 to 15% dark-eyed) in northwest Scotland and southeast Ireland to

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two dark-eyed regions (35 to 40% dark-eyed) in northwest and south Wales. Map 6 shows the relation between dark hair and light eyes in the British Isles. The greatest excess of dark hair over light eyes is found in the western part of Ireland.

It is noteworthy that in the western part of Britain even the old, native races of cattle are mostly black, while those of drier, east England are mostly brown. On the other hand, many north Russian populations—living in a continental cold-dry environment—show the opposite pigmentation relations: relatively more pigment in the skin and eyes than in



MAP 6 THE RELATION BETWEEN DARK HAIR AND LIGHT EYES IN GREAT BRITAIN AND IRELAND (LUNDMAN, 1936—ACCORDING TO THE TABLES COMPILED BY BEDDOE, 1885). The map symbols from 1 to 6 indicate an increasing excess of dark hair over light eyes.

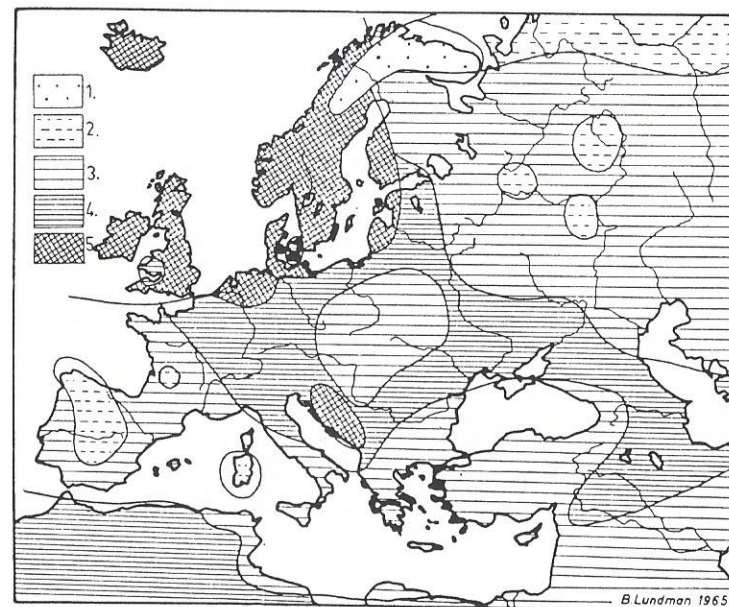
the hair. The whole pattern shows a remarkable parallel to the relations among warm-blooded animals under similar conditions—the Gloger-Görnitz “rule of climate.” A purely local exception to this is the case of the Czechs, who are darker-haired than their environment but not darker-eyed.

This *depigmentation* of the White race, which becomes ever greater as one moves northward, is shown on Map 1. It occurs to approximately the same degree for skin color, eye color, and hair color. It is generally a true textbook example of a “cline” in man in the sense of Julian Huxley. The clinal distribution of pigmentation extends from the Sudan in Africa and the Deccan region of India in the south up to Scandinavia and the eastern Baltic lands in the north.

Stature

The variation of the other racial traits (stature, cephalic index, et al.) does not show the same striking regional distribution as in the case of pigmentation. Map 7, which depicts the distribution of the stature of adult males in Europe around 1940, is quite variegated. There are five zones in Europe ranging from an adult male mean of 160 cm. and under to a mean of 172 cm. and over. For a long time the tallest people in Europe have been the peoples of northwest Europe, inhabiting a zone extending from Ireland in the west to Estonia in the east. This zone comprises the peoples of England, Scotland, Ireland, Iceland, Norway, Sweden, Denmark, Holland, northwest Germany, western Finland, Estonia, and Latvia. A second area of tall stature—geographically isolated from the northern zone—is to be found in northern and central Yugoslavia. Almost the entire Ukraine lies close to these high values for mean stature.

The Scandinavian and Finnish Lapps are among the shortest peoples in Europe. Reliable data from earlier times record an adult male mean of 155 cm. and under for the Lapps. Short stature is also found among many Finnic peoples inhabiting northern Russia. The many mostly poorer mountain-dwellers of south and southwest Europe are also characterized by short stature, especially on the island of Sardinia,



MAP 7 THE DISTRIBUTION OF ADULT MALE STATURE IN EUROPE AROUND 1940 (LUNDMAN, 1943—BASED IN PART ON STRUCK, 1922 AND SUPPLEMENTED BY LUNDMAN IN 1952, 1963, AND 1965).

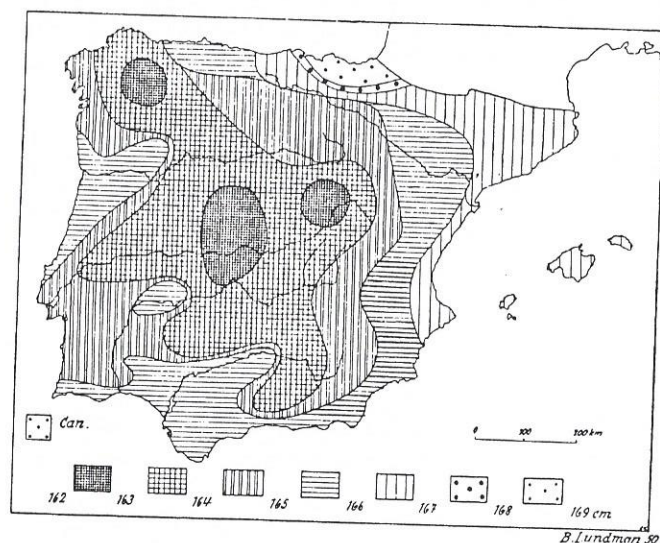
- | |
|------------------------|
| 1. = 160 cm and under. |
| 2. = 160–164 cm. |
| 3. = 164–168 cm. |
| 4. = 168–172 cm. |
| 5. = 172 cm. and over. |

and also in the Spanish plateau region. In earlier times the greater part of Poland (1919–1939) and central Russia were regions of short stature.

Already this brief compilation shows a certain correlation between stature and living conditions. The inhabitants of the subpolar region and the likewise almost as poor Mediterranean mountain-landers are reduced in stature compared

to the well-to-do coast-landers of the North Sea region. Map 8 shows the distribution of stature in the Iberian peninsula. The tallest people are the Basques in northern Spain. The shortest people are to be found in the plateau regions of central, western, and northwest Spain. The regional differences in stature on the whole Iberian peninsula appear to be predominantly environmentally conditioned.

However, the Yugoslav province of Montenegro, which



MAP 8 THE DISTRIBUTION OF STATURE IN THE IBERIAN PENINSULA (LUNDMAN, 1950—ACCORDING TO THE OFFICIAL SPANISH MILITARY STATISTICS FOR 1927 AND TO TAMAGNINI, 1932 FOR PORTUGAL).

- = 162-163 cm. and under.
- = 163-164 cm.
- = 164-165 cm.
- = 165-166 cm.
- = 166-167 cm.
- = 167-168 cm.
- = 168-169 cm. and over.

is just as barren and underdeveloped as Sardinia, harbors one of the tallest populations in Europe, if not in the world. The mean stature of adult males is 178 cm. and above. On the other hand, several prosperous central European populations are barely medium tall.

Furthermore, in the last 100 years there has been a significant increase in stature in Europe parallel with the increase in living standards. At present the increase in stature has been most pronounced in northwest Europe. In Sweden, for example, the mean stature has increased some 10 cm. from 1840 to 1965. On the other hand, on the Spanish peninsula, which until recently has remained economically underdeveloped, the change in stature at that time was almost zero.

Despite these secular increases in stature in various parts of Europe, the overall regional differences in mean stature have remained unchanged to a high degree. In Italy and the Netherlands, the north-south difference in mean stature has increased around 4 cm. in the last 70 to 80 years. This is due to the greater increase in stature in the northern parts of these countries. The Ukraine has become still taller (1 to 1.5 cm.) than central Russia in the past 40 to 50 years.

This increase in stature is primarily due to a more rapid and strong growth during youth. It concerns above all the limbs, so that the individuals become slenderer. This results in a lower Rohrer Index, while the Kaup Index remains unchanged. In addition, it now appears to have been demonstrated that in north and central Europe the long individuals are physically more early-maturing. In comparison, in Great Britain the increase in stature belongs entirely to the last generations, if one excludes some previously undernourished worker populations.

To a certain degree the individual differences in physical strength in the struggle for existence in earlier times should be a factor in the present distribution of the races of Europe. Thus, physically smaller peoples are forced into waste regions by larger peoples. Evidently, this was the case with the Lapps. However, in medieval and later times many large

Dinaric peoples in the Balkans were pushed back into poor, barren regions by the physically smaller, but military-technically predominant Byzantine Greeks, Turks, and Hungarians.

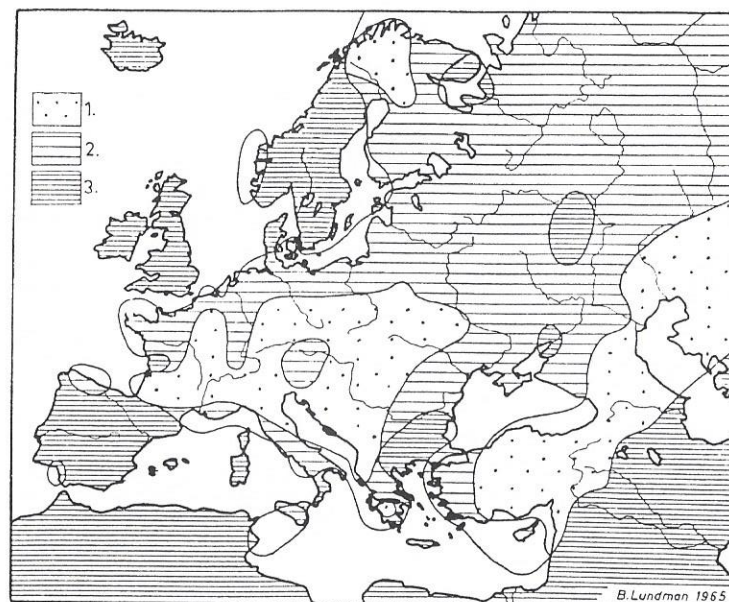
Unfortunately, we do not possess sufficient information about the Rohrer Index and the Kaup Index to depict their geographical distribution at this time.

Head Form—Cephalic Index

The European distribution of one measure of head form—cephalic index or breadth-length index of the head—is shown in Map 9. In the case of this anthropological trait also, significant regional differences exist. We find dolichocephalic or long-headed peoples above all in northwest Europe (Scandinavia and the British Isles) and southwest Europe (Iberia, southern Italy, and the west Mediterranean islands). In Sweden a mean cephalic index of around 74 is found in certain localities, which may be a European minimum.

In comparison, brachycephalic or round-headed peoples are found in a wide zone through central Europe. This zone extends from Les Landes on the Bay of Biscay across the French central plateau region, the western Alps, northern Italy, up to Yugoslavia and Hungary; and then northwards over the western Carpathians to Silesia and south Poland. In central France in the nineteenth century, the European maximum was probably attained with a mean cephalic index of around 90 in places. One noteworthy exception to this central European zone of brachycephaly is the population of Geneva, Switzerland. Since the Middle Ages the Genevans have been continually mesocephalic.

Moving further east, brachycephaly or round-headedness is somewhat less strongly pronounced in Russia. The cephalic index declines here and there—for example, around the lower reaches of the Don river and among the Volga Finns, to mesocephalic values. On the other hand, the Lapps are brachycephalic. We also find a rather large isolated re-



MAP 9 THE DISTRIBUTION OF THE BREADTH-LENGTH INDEX OF THE HEAD (CEPHALIC INDEX) IN EUROPE (LUNDMAN, 1943).

$$\text{Cephalic Index (C.I.)} = \frac{\text{Breadth of Head}}{\text{Length of Head}} \times 100.$$

- 1. Round-headed (Brachycephalic): C.I. = 83 and over.
- 2. Medium-headed (Mesocephalic): C.I. = 80–82.
- 3. Long-headed (Dolichocephalic): C.I. = 79 and under.

gion of long-headedness or dolichocephaly in the eastern parts of the Balkan peninsula (Bulgaria and northeastern Greece).

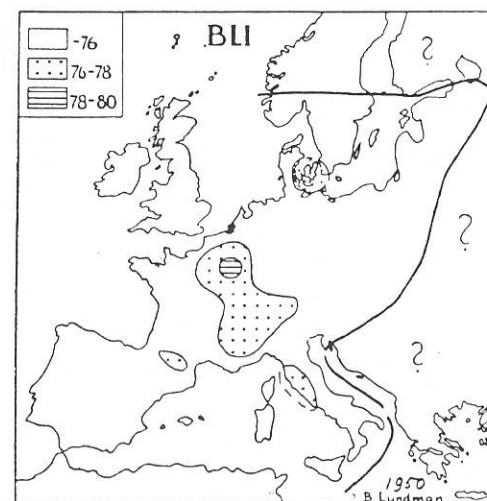
Correlations between economic conditions and head form (as measured by the cephalic index) can be established to a lesser degree than in the case of stature. We still often find rounder-headed or more brachycephalic populations in the mountainous regions of Europe—the French Central-Mas-

sif, the Alps, the Carpathians, the west Balkans, Lappland, etc. However, the Central European zone of round-headedness terminates sharply defined at the northern base of the Pyrennes mountains. In the eastern Balkans the mountain-dwellers are still more long-headed or dolichocephalic than the people of the surrounding areas. In southern Norway the round-headed zone is concentrated entirely in the western coastal region.

Furthermore, we have at present no similar changes in cephalic index which are environmentally conditioned as in the case of stature. In general, the degree of brachycephaly or round-headedness of the local residents in large parts of Europe now appears to be declining again. Thus, in parts of France, such as the Savoy region, the mean cephalic index decreased from 87 around 1830 to 84 in 1950. Similar declines have been observed among the Swiss and the Norwegians. On the other hand, during the earlier modern times and in the Middle Ages a more or less pronounced change in the opposite direction took place almost everywhere in Europe. This contrasts also with the much lower mean value of the cephalic index found in Europe at the end of the Neolithic period.

In Central Europe the increase in mean cephalic index from the early Middle Ages to the nineteenth century was extremely pronounced. For example, in Bavaria the proportion of the population classified as brachycephalic or round-headed increased from some 30% to 80-90% during this time period. In northwest Germany the change was from about 20% to more than 50% during the same time. The trend toward greater degree of brachycephaly still continues in parts of Poland and Rumania (Necrasow). This trend has naturally been much less pronounced in those regions of Europe which are presently still dolichocephalic or long-headed. In fact, in central Sweden there has been no change at all over time in mean cephalic index.

How does one explain these changes in head form? The relatively small decrease in mean cephalic index in recent times is probably connected with the stronger and quicker



MAP 10 THE DISTRIBUTION OF THE BREADTH-LENGTH INDEX OF THE SKULL (CRANIAL INDEX) IN EUROPE AT THE END OF THE NEOLITHIC PERIOD * (LUNDMAN, 1943—ACCORDING TO THE TABLES COMPILED BY SCHEIDT, 1924; AND OTHER SOURCES).

$$\text{Cranial Index (C.I.)} = \frac{\text{Breadth of Skull}}{\text{Length of Skull}} \times 100.$$

□ = Cranial Index of 76 and under.

□□□□ = Cranial Index of 76-78.

□□□□□□ = Cranial Index of 78-80.

* The migrating Bell-Beaker people are not included on the map.

growth in youth. At this age period the head often becomes somewhat relatively longer-formed. In parts of Switzerland and other regions of Europe, the disappearance of cretinism and other conditions, produced by the importation of iodine, etc., is partly responsible for changes in population values of head form.

But what about the great increase in cephalic index in the

Middle Ages and later periods? We still do not know to what degree environment, hereditary changes, and selection were factors in this change in head form. The economic conditions of the lower classes in Europe evidently deteriorated in many ways during this time period. This was due to a sharp increase in population, long-lasting and destructive wars, and intensified pressure of the nobility upon the serfs. Moreover, in this time pronounced hereditary changes were being established. In part this was associated with a rearrangement (through selection) of the hereditary composition of the population.

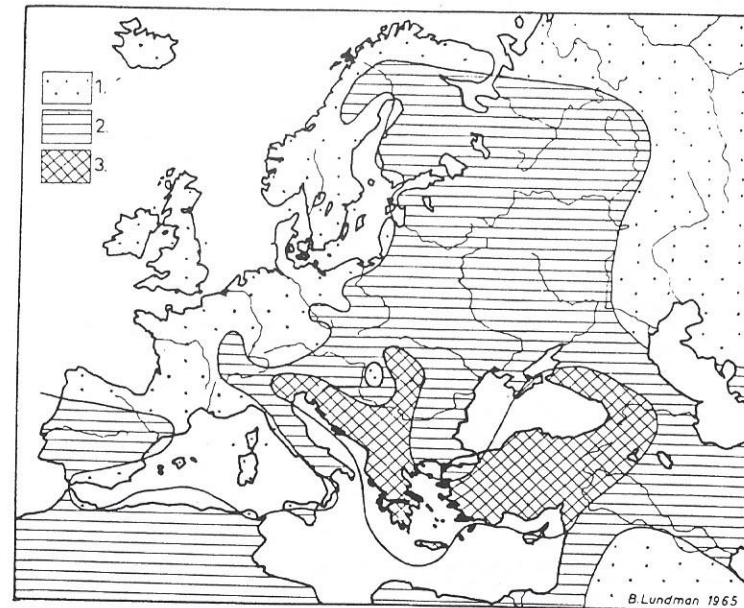
The changes appear to have tended toward a later-maturing and less assuming type, predominantly of the Alpine race. This type could have had relatively better chances for reproduction and survival during the times of war, scarcity, and pestilence (such as the Black Death around 1350) than the more assuming and earlier-maturing type, of the Nordic race. The round-headed mountain dwellers also suffered less in their protected location during the serious troubles of the land. Thus, these people could later partly settle the rich plains devastated by war and plague.

However, all the above is in no way a sufficient explanation of the change in cephalic index. For in the past two millennia a similar change in head form is very often observable among Mongolid populations. It also occurred among Europid peoples living in the colder regions of Europe, but not among Europids of the warmer regions. Perhaps this is one of the causes of the sound shift in the south German language which set in at about the same time.

Head Form—Other Indices

Let us now turn to two other racial characteristics, which obviously have the greatest significance for deciphering the migrations and mixtures of races. For these traits—as far as we can determine—are completely constant or independent of the environment. They evidently show almost no hereditary changes in historical times.

The first anthropological trait is the relation of the height to the length of the cranium, known as the *Height-Length Index* (H.L.I.). This is not measurable on living subjects. Map 11 shows the distribution of this index in Europe in



MAP 11 THE DISTRIBUTION OF THE HEIGHT-LENGTH INDEX OF THE SKULL IN EUROPE IN MODERN TIMES (LUNDMAN, 1943).

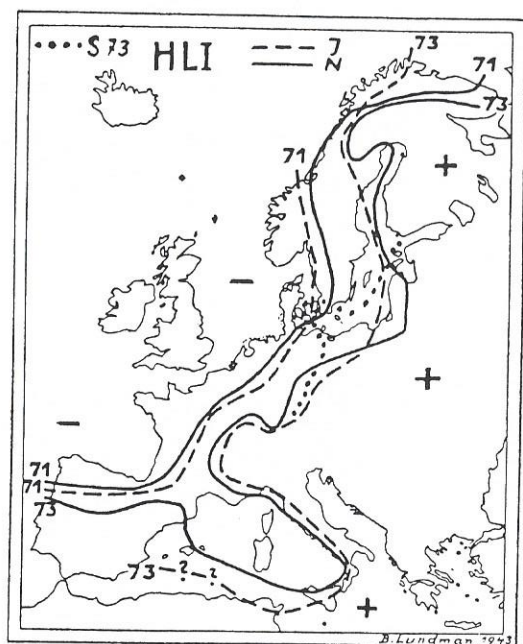
$$\text{Height-Length Index (H.L.I.)} = \frac{\text{Height of Skull}}{\text{Length of Skull}} \times 100.$$

- 1. Low-skulled (Chamaecephalic): H.L.I. = 73 and under.
- 2. Medium-skulled (Orthocephalic): H.L.I. = 73–76.
- 3. High-skulled (Hypsicephalic): H.L.I. = 76 and over.

modern times. The Height-Length Index indicates three zones in Europe. These range from a region of low-vaulted crania in West Europe (the British Isles, Scandinavia, Ger-

many, France, and northern Spain) to a region of high-vaulted crania in the western Balkans and Anatolia.

Since the heads (crania) often became shorter and wider in the Middle Ages, the height of the cranium also diminished somewhat. In this way the relation of the height to the length of the cranium remained almost unchanged. Map 12 shows how remarkably similar have been the zones indicating the distribution of the height-length index in Europe



MAP 12 THE DISTRIBUTION OF THE HEIGHT-LENGTH INDEX OF THE SKULL IN EUROPE AT DIFFERENT TIME PERIODS (LUNDMAN, 1943).

- S = End of the Neolithic Period.
- J = Iron Age.
- N = Modern Times.

from the end of the Neolithic Period through the Iron Age to modern times.

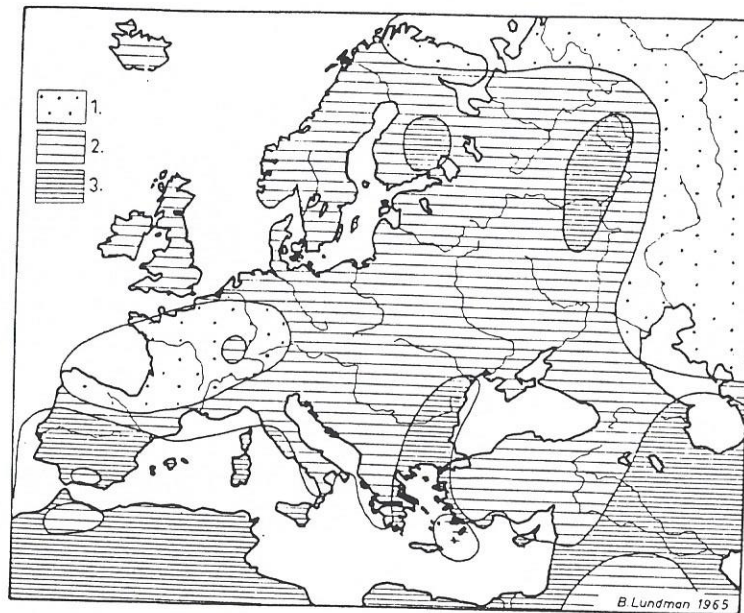
The boundary between the low-skulled West Europe—from northern Norway down to northern Portugal—and the high-skulled central region of Europe is up until our time often rather sharply defined. Still more sharply defined is the border between the high-skulled Europid populations of eastern Europe and southwest Asia and the low-skulled Mongolid populations of northern and central Asia. The small low-skulled enclaves in the Magyar Pussta region and among the Transylvanian Szeklers indicate stronger and later Mongolid strains. Likewise, the similar low-vaulted crania of the eastern Lapps (in northern Finland) indicates Mongolid admixture among these people.

On the other hand, the continuous region of high-vaulted crania across southern Russia shows how relatively little Mongolid blood infiltrated this part of Europe. There is also a high-skulled region in the southern half of the Spanish peninsula. This is evidently connected with similar regions in the Sahara of North Africa. The Sierra Nevada region of southernmost Spain and the Atlas Mountain area of northern Morocco, however, are more low-skulled.

The second anthropological trait is the relation of the height to the breadth of the cranium, known as the Height-Breadth Index (H.B.I.). For the geographical distribution of the Height-Breadth Index, we have only an older map constructed by the author in 1939 and subsequently modified. Map 13 shows the distribution of this index in Europe with three zones indicated. These range from a region of low-broad crania in western Germany, Belgium, France, and northern Spain to a region of high-narrow crania in south-eastern Finland, the southeast Balkans, southern Spain and the Mediterranean islands, and across North Africa.

Blood Groups

The distribution of the alleles of the human blood groups in Europe also shows marked regional variations, which are



MAP 13 THE DISTRIBUTION OF THE HEIGHT-BREADTH INDEX OF THE SKULL IN EUROPE (LUNDMAN, 1939).

$$\text{Height-Breadth Index (H.B.I.)} = \frac{\text{Height of Skull}}{\text{Breadth of Skull}} \times 100.$$

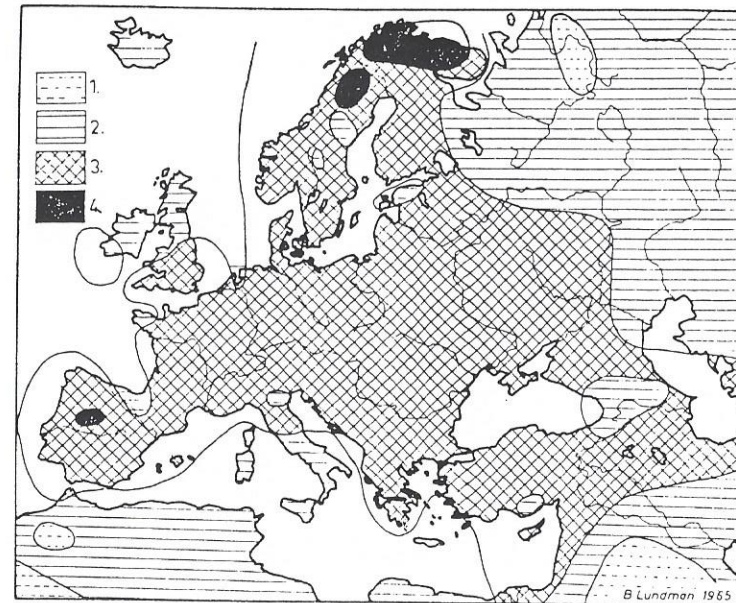
- 1. Low-broad skulled: H.B.I. = 90 and under.
- 2. Medium-skulled: H.B.I. = 90-95.
- 3. High-skulled: H.B.I. = 95 and over.

of great interest to anthropologists. This distribution is certainly very old, since the mutation rate of the alleles is evidently very low. Unfortunately, we can study blood groups almost only on living subjects.

Serological studies show, for example, the almost total identity of blood group relations among the peoples of northern India and the Gypsies of Europe. Often such studies demonstrate the striking "Mongolic," or rather eastern,

blood-picture of the Magyar Pussta population and of the eastern Lapps. These allelic frequencies are consequently especially important to anthropologists, because they are almost the only anthropological traits which show directly the genetic differences between populations.

The European distribution of blood-allele *p* (the gene for blood type A in the ABO-System) is shown in Map 14. The



MAP 14 THE PERCENTAGE DISTRIBUTION OF BLOOD-ALLELE *P* IN THE ABO-SYSTEM IN EUROPE* (LUNDMAN, 1963—ACCORDING TO MOURANT, 1958).

- 1. 15% or less.
- 2. 15 to 25%.
- 3. 25 to 40%.
- 4. 40% or more.

* The frequency of the *p*-gene can be derived from the ABO-phenotypes by the following formula: $p = \sqrt{A + O} - \sqrt{O}$

p -gene attains its highest global frequency in Europe and Asia Minor. The maxima probably occur in Scandinavia and Finland, as well as in several central and south European regions. The most distant parts of northwestern and eastern Europe, together with southern Italy and the Mediterranean islands, show lower values for the p -gene. The European minimum is found in western Ireland with a gene frequency of less than 15%.

It is also interesting that low p -values (20% or less) are found in several refuge areas of Europe—among the Basques, in the marsh and moor regions of the Netherlands, in the Po delta region of northeastern Italy, and in some forest regions of central Sweden. This probably means that large parts of the western half of Europe may have had lower p -gene frequencies—i.e., smaller proportions of blood type A—in earlier or prehistoric times. The higher p -frequencies may have been first diffused by Indo-European agricultural tribes from southeast Europe. Moreover, in Central Europe there is no difference in p -gene frequency between the predominantly Nordic and the predominantly Alpine regions.

The high p -value in the greatest part of the Iberian peninsula is noteworthy. The isolated Castilian boundary-mountain regions attain p -values bordering on the world-maximum, up to at least 50%. These high p -values are found in both the low-skulled and the high-skulled regions of Spain, but not among the living Basques or in the surrounding areas which were once Basque-speaking. The Spanish blood-group relations are also noteworthy in regard to the much lower p -values in all the Europid parts of northwest Africa.

The particularly high p -value of the Lapps, both the eastern and western groups, evidently has a special history. For among these people the rare P_2 -group (for blood type A_2) predominates over the more common P_1 -group (for blood type A_1) to the highest degree by far in the entire world.

The European distribution of blood-allele r (the gene for blood type O in the ABO-System) is shown in Map 16. The distribution of this allele shows many interesting features.

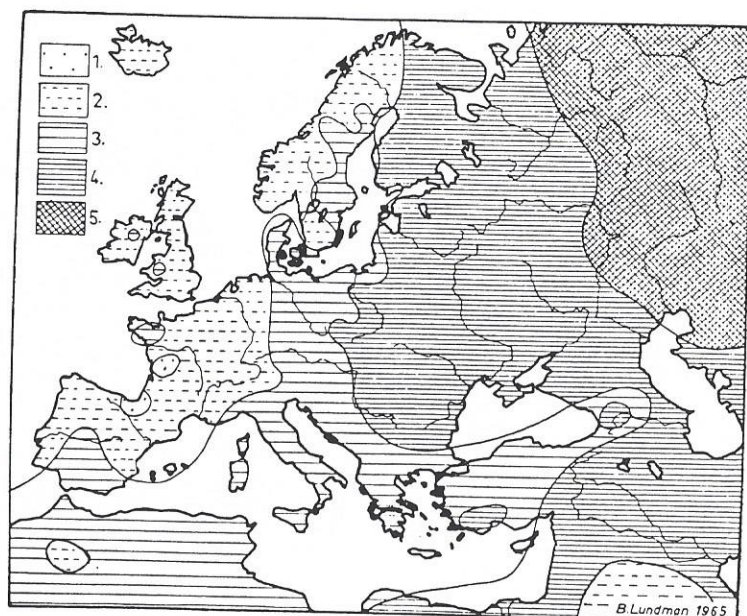
The maxima for the r -gene in Europe are attained in the above-named relatively low- p regions in the western half of the continent. In western Ireland r -frequencies of 80% or more are found. In eastern Europe, and among all the Lapp groups, the r -gene is much more weakly represented. The percentage values are up to 50% in these populations.

The somewhat isolated region of East Karelia in northwestern European Russia shows very divergent blood group proportions: high q , moderate r , but very low p . These proportions are found among the Finns as well as among the Russians who have been living in this region since olden times. In total these blood group proportions are almost "East Siberian" values. However, they are probably only the result of "genetic drift" among this still partially isolated population with a very weak degree of Mongolid admixture.

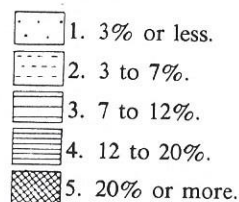
The European distribution of blood-allele q (the gene for blood type B in the ABO-System) is shown in Map 15. The distribution of this allele is of special interest to us. In almost all East Europe north of the Danube river and to the west approximately to the Finnish-Scandinavian and the German-Slavic linguistic boundaries (as of the year 1900), we find a higher q -frequency together with a greater proportion of high-skulled crania. West of the Adriatic and the eastern Alps, however, the high-skulled regions are low in the q -gene. In southern Spain we find medium q -values, together with long-high crania.

The Lapp groups show completely contrary blood and cranial relations. The Scando-Lapps are high-skulled, but very low in the q -gene. On the other hand, the East Lapps are low-skulled and high in the q -gene. These still little known relationships are also very unique from a racial-physiological standpoint (L. Beckman).

The higher q -value, i.e., higher frequency of blood type B, in East Europe is evidently caused by Mongolid blood only to the slightest degree (remember the above description of the distribution of cranial height in East European Europid and north Asian Mongolid populations). The q -value is just as high in Estonia and West Poland as around the Moscow

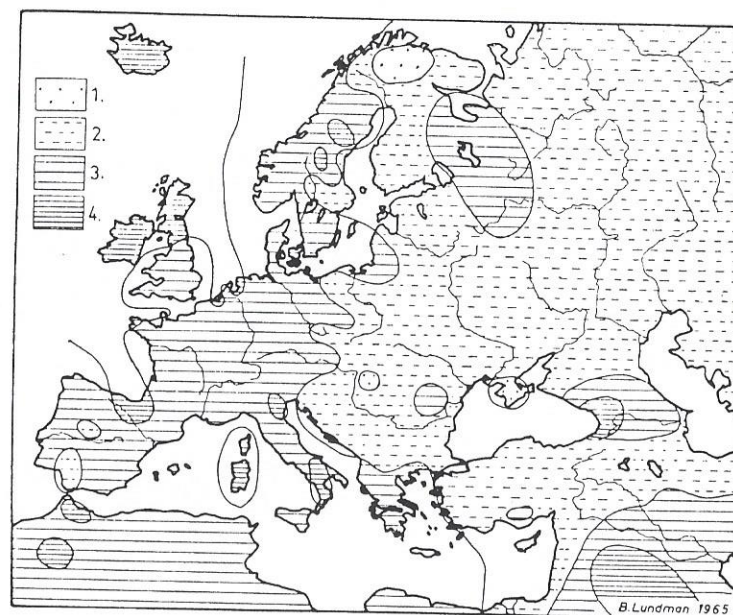


MAP 15 THE PERCENTAGE DISTRIBUTION OF BLOOD-ALLELE *Q* IN THE ABO-SYSTEM IN EUROPE * (LUNDMAN, 1963—ACCORDING TO MOURANT, 1958).

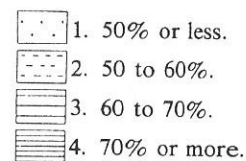


* The frequency of the *q* gene can be derived from the ABO-phenotypes by the following formula: $q = \sqrt{B + O} - \sqrt{O}$

region of Russia. In both areas the *q*-value is somewhat higher than in the central Ukraine. Naturally, these blood-group patterns are incompatible with an exclusively Mongolid source for the higher frequency of blood type B in East Europe. This higher *q*-value is thus far older and characteristic of many eastern Europid races.



MAP 16 THE PERCENTAGE DISTRIBUTION OF BLOOD-ALLELE *R* IN THE ABO-SYSTEM IN EUROPE * (LUNDMAN, 1963—ACCORDING TO MOURANT, 1958).



* The frequency of the *r*-gene can be derived from the ABO-phenotypes by the following formula: $r = \sqrt{O}$

Furthermore, the almost completely Mongol-free Europid peoples of northern India have just as high *q*-gene frequencies as the Central Asiatic Mongolids. The sharp decline in *q*-value at the German-West-Slavic language boundary up until our time shows how old must be this anthropological difference. It dates back, at least, to before 1000 A.D.

The relations of the other blood group systems are even

THE RACES AND PEOPLES

in Europe barely sufficiently known in detail. In the MN-system, the proportion of blood type M declines rather uniformly from east Europe to west Europe. However, as a purely local exception very high M values are found on the island of Sardinia. With regard to the Rh-system, low frequencies of "Rh-negative" individuals are found among the Lapps, the Sardinians, and the Galicians of Spain. Among the Basques, however, the frequency of Rh-negatives is relatively high.

Unfortunately, the geographical distribution of other important anthropological traits—body form, facial index, nasal index—cannot be treated within the scope of this paper. Some of these traits are insufficiently known as to their geographical variability. Other of these traits show no great regional contrasts.

II

THE LIVING RACES AND PEOPLES OF EUROPE

LET US NOW superimpose the different maps which have been compiled to illustrate the distribution of anthropological traits in Europe. The extreme regions of the various anthropological traits would only on rare occasions be identical. Hence, only a few, completely satisfactory, comprehensive geographic correlations would be produced. We consider, therefore, not the individual combination types (which also do not appear directly on the maps), but only the mean types of the actual regions. Thus a great quantity of different local combinations of these values is already indicated.

We have prepared a map of the racial geography of Europe, on which we have drawn only the most sharply defined borders of the anthropological traits analyzed here. Thus, a significant coincidence of different borders is still frequently indicated. For example, at about the northern base of the German central mountain region we find a distinct increase in pigmentation and round-headedness (brachycephaly), coupled with a decrease in stature. Another

particularly strong accumulation of changes in values of racial characteristics is found at the national boundaries between the Scandinavians and the Lapps, and also between the Russians and the Kirghiz peoples of Central Asia. In earlier times there were noticeable differences between the Germans and the West Slavs (i.e., Czechs and Poles) in anthropological traits, such as cranial height and frequency of blood type gene q , and in the case of the Czechs also hair color.

Europe can be divided, at least for pedagogical purposes, into four anthropologically distinct *quadrants*. The point of intersection of these four regions is approximately in the Lausitz area of central Germany and western Poland. The four regions are listed below in decreasing order of homogeneity:

1. A blood type q -gene low, low-(and mostly also long-) skulled, rather tall, and blond "Germanic" northwestern quadrant;
2. A likewise blood type q -gene low, and low-skulled (with the exception of southern Spain), but shorter-statured, and dark "Romanic" southwestern quadrant (still with very variable breadth-length relation of the head);
3. A high-skulled and rather dark Balkan southeastern quadrant (with very variable stature and breadth-length index of the head), and blood type q -gene mostly a little above the European mean;
4. A blood type q -gene high and also high-skulled "Slavo-Finnic" quadrant, with variable pigmentation and stature, and mostly only a lesser degree of round-headedness.

Outside of these four quadrants remain the Lapp groups, and naturally also the small Mongolid enclaves in Europe.

The Anthropological Systematics of Europe

Apart from the above rather artistic quartering of Europe, a synthetic anthropological map of the continent appears mostly like a landscape of sand dunes. The maxima of the different types have natural centers in the different regions

of Europe. However, they show mostly flowing transitions into one another. The maxima are quite stable. But, for the most part, rather slow shifts of these maxima in the course of time can be recognized. For they are neither as firm as a granite mountain, nor as changeable as a stormy sea.

Consequently, we find in many regions of Europe a population concentrated around one predominant anthropological type. We can well designate this type as a race, so long as we do not set greater standards of homogeneity than the zoologists do for their races. We should not conceive the races too narrowly, as if in each case all men in their nuclear regions would be of almost the completely same hereditary-type.

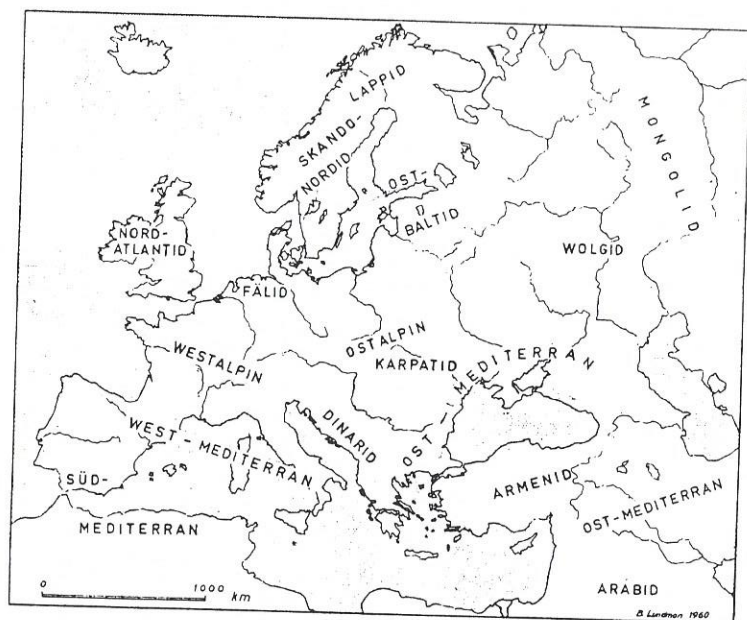
The names of these races are now generally well known. To break with this terminology would be a rejection of the biological rules of nomenclature. The foundation of all classifications of the peoples of Europe is and remains that of the (Russian-born) French zoologist and anthropologist Joseph Deniker. Deniker, who died in 1918, worked out his classificatory system for the races of Europe in the 1890's. However, he intentionally did not consider the Finnish and Turkish peoples of our continent. Deniker based his system upon the total anthropological material known at that time. Naturally that material still showed many deficits.

Other investigators have later altered, extended, or added to this classificatory system—with more or less fortunate hand. My conception, however, has been strongly influenced by the so-called newer biosystematic school of Bernard Rensch, Ernst Mayr and Julian Huxley. Furthermore, I am inclined to give much greater consideration to the height-length index of the skull and to the distribution of the blood group alleles in my anthropological systematic studies than occurred in the case of earlier investigators.

As a modern biologist I am less inclined than Deniker to award the status of race to a scattered distribution, without historical and geographical grounds. I prefer to think rather of parallel evolution in regions situated far from one another. Hence, in this case one should speak of two distinct races

even if they are morphologically very similar. There are also often found on closer consideration some pervading differences between two such races which previously were not observed.

To be sure, these differences are apparently insignificant, but obviously important from the standpoint of anthropological systematics. Here also, one can often make use of differences in cranial height and sometimes of the blood group allelic relations. Consequently, some of the races described by Deniker, which are to be distributed in regions situated far from one another, can be divided into two separate races: a western with low cranial height and an eastern with higher values. This is particularly true of the Mediterranean and Alpine races. By this means the map of the races of Europe



MAP 17. THE GEOGRAPHICAL DISTRIBUTION OF THE RACES OF EUROPE (LUNDMAN, 1960).

assumes a much more natural appearance (See Map 17).

However, I have not had to strike out any of Deniker's primary European races and only one of his subraces. This is the Vistula race, which is completely unclear to all anthropologists following Deniker. The Litorid race of Deniker is still only a rather late hybrid-race. The specific contributions of the author concern almost only a few insignificant remnant races. These are primarily among the Finnic tribes which Deniker did not take into consideration in his anthropological systematics.

The Races of Europe—An Outline

Let us begin with northwestern Europe. Here we encounter the Nordid race or the *North-race* (the Nordic race of Deniker). The Nordid race is light-eyed, mostly rather light-haired, low-skulled and long-skulled (dolichocephalic), tall and slender, with more or less narrow face and narrow nose, and low frequency of blood type gene *q* (See Figure 1). The Nordid race has several subraces. The most divergent is the Faelish subrace in western Germany and also in the interior of southwestern Norway. The Faelish subrace is broader of face and form (See Figure 2). So is the North-Atlantid subrace (the North-Occidental race of Deniker), which is like the primary type, but has much darker hair. Above all in the oceanic parts of Great Britain the North-Atlantid subrace is also very high in blood type gene *r* and low in blood type gene *p*. The major type with distribution particularly in Scandinavia is here termed the Scandid or *Scando-Nordid* subrace.

In certain outlying parts of Scandinavia and Ireland, a primitive race—the Palaeo-Atlantid—still lives in small remnants (See Map 18). The Palaeo-Atlantid race is darker than the Nordid race—especially as regards to hair color. It is also coarser than the Faelish subrace, with stronger brow ridges, and a broader, plumper nose. With respect to the ABO-blood group system, the Palaeo-Atlantid race is high in blood type gene *r* and low in blood type genes *p* and *q*. In the north,

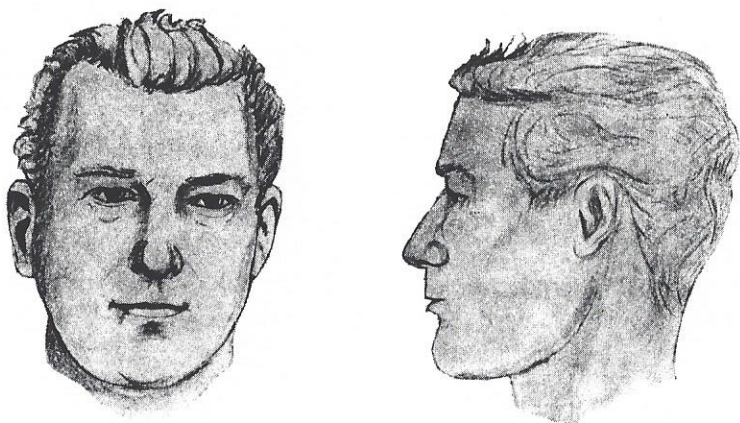


FIGURE 1
SCANDO-NORDID RACIAL TYPE.

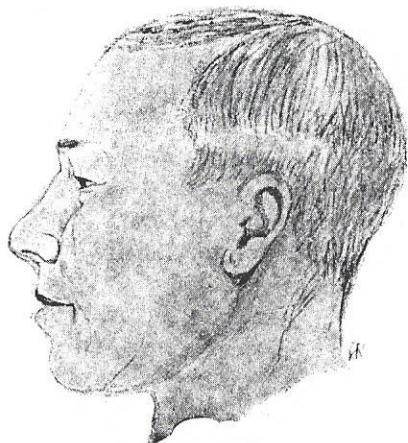


FIGURE 2
FAELISH RACIAL TYPE.

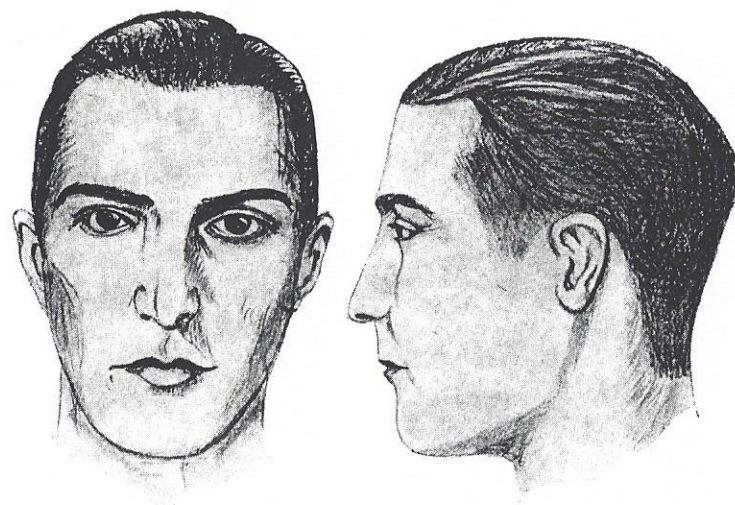


FIGURE 3
WEST-MEDITERRANEAN RACIAL TYPE.



FIGURE 4
DINARID RACIAL TYPE.



FIGURE 5
EAST-BALTIC RACIAL TYPE.



FIGURE 6
EAST-ALPINE RACIAL TYPE.



FIGURE 7
SCANDO-LAPPID RACIAL TYPE.

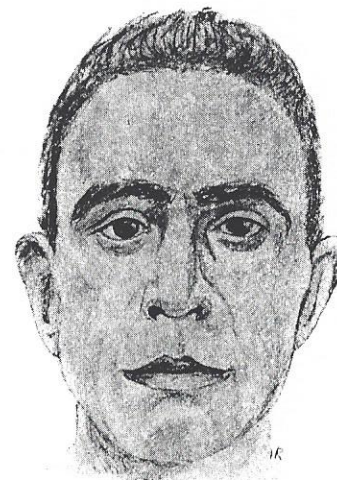


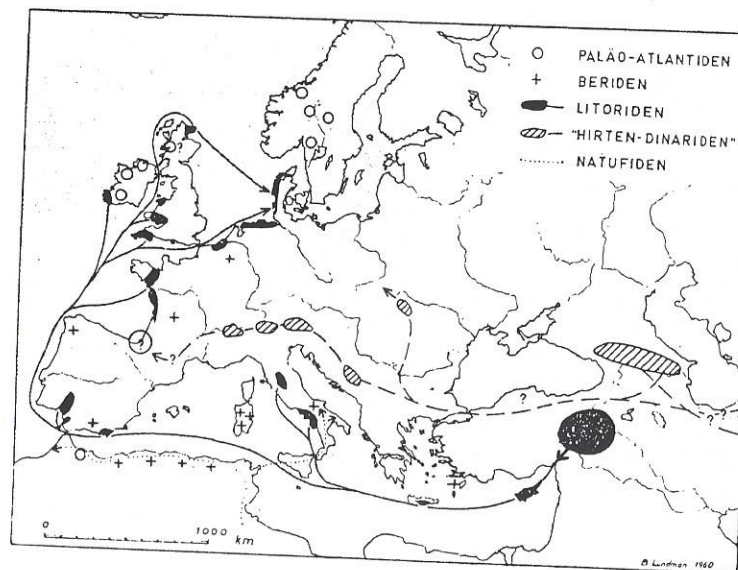
FIGURE 8
EAST-MEDITERRANEAN RACIAL TYPE.



FIGURE 9
ARMENID RACIAL TYPE.



FIGURE 10
ARABID RACIAL TYPE.



MAP 18. EARLY MIGRATIONS OF THE RACES OF EUROPE (LUNDMAN, 1957) (Natufids = Prae-South-Mediterranids).

this race is named the Tydals race, after a village in central Norway.

The short and thickset brunet, Central European population with low and round (brachycephalic) skulls and with round faces belongs to the *West-Alpine* race (the Occidental race of Deniker). This race is also low in the frequency of blood type gene *q*. A similar, but high-skulled, type, with a higher frequency of blood type gene *q*, is found further to the east in Europe. This is the *East-Alpine* or *Gorid* race (See Figure 6).

The true West-Mediterranean race (the Ibero-Insular race of Deniker) in southwestern Europe is low-skulled and long-skulled (dolichocephalic), dark, short-statured, and gracile in body form (See Figure 3). This race has a narrow face and is low in the frequency of blood type gene *q*. Within this region, however, there are remnants of the still smaller *Berid*

race (See Map 18). This race is broader-formed in face and nose, but very similar to the West-Mediterranean race in the other anthropological traits—such as head form and pigmentation. The Berid race is also low in the frequency of blood type genes p and q .

In southern Spain and southern Portugal we have a branch of the East-Mediterranean race—the South-Mediterranean or *Saharid* subrace. This subrace is also high-skulled, but very similar to the West-Mediterranean race in the remaining anthropological traits. It is also low in the frequency of blood type gene q . Likewise very similar, but higher in frequency of blood type gene q , is the Pontid subrace of the East-Mediterranean race. This subrace is found in certain regions west and north of the Black Sea.

The *Arabid* race (i.e., the Bedouins, et al.) is distinguished from the West-Mediterranean race almost only by a nevertheless unusually large number of small, but very characteristic facial traits (See Figure 10). These include the almond eyes, the "Semitic smile" (conditioned by unusually deep *Fossa canina*), etc. This race had in earlier times a broader-formed *Syrid* subrace, which was found among the farmers of the "Fertile Crescent." It is now only typical of the Jews.

The *Dinarid* race is very tall, dark, high-skulled and round-skulled (brachycephalic), with a very large, long, but also rather broad, face and with a large, more or less bent nose (See Figure 4). This race is low in the frequency of blood type gene q . The Dinarid race probably originated in southeastern Europe.

The Dinarid race has a very closely-related, somewhat shorter-statured, subrace in southwestern Asia, namely, the *Armenid* subrace (See Figure 9). The Armenid subrace has higher frequencies of blood type genes p and q . The very much shorter-statured population around the Carpathian mountain region of eastern Central Europe forms a special "hybrid-race" ("*Mischrasse*")—the Carpathid race (the Litoral race of Deniker). This race, which resembles the east-Alpines in many anthropological traits, has a larger nose. This is due to ancient Armenid strains (which is also the view

of Hungarian investigators). The Carpathid race evidently originated from mixtures of Mediterraneans with Armenids.

In eastern Russia we frequently have a very small, dark, high-skulled and also long-skulled (dolichocephalic) race—the *Volgid*. This race has a broader, somewhat protomorphic face and a smaller, plumper nose. The Volgid race is high in the frequency of blood type gene q . Strains of a similar race are found westward to Bohemia, where it is known as the "Sudeten-race." Moreover, in the Balkans traces of an extraordinary long-skulled (dolichocephalic) race are encountered—the Pre-Pontid type. (These are not Gypsies).

In western and central Russia, northern Poland, and, still stronger, in Estonia and Finland, the *East Baltid* race is found. The East Baltids are light-blond, high-skulled and round-skulled (brachycephalic), with a broad angular face and a stub-nose (See Figure 5). This race is high in the frequency of blood type gene q . It is polymorphic (*vieltalig*). There are in Finland two subraces of the East Baltid race, a western Tavastid subrace (the Sub-Nordic race of Deniker?) and a more eastern Savolaxid subrace. The latter is smaller and somewhat less brachycephalic than the former, but almost just as blond.

We classify the Scandinavian Lapps as the *Scando-Lappid* or *South-Lappid* race (also termed the Samid race). The Scando-Lappids are short-statured, high-skulled and round-skulled (brachycephalic), and broad-faced (See Figure 7). They have a weak lower jaw and are small-nosed. The Scando-Lapps are very low in the frequency of blood type gene q and are also unique in the remaining serological traits. The East-Lapps show, in part, more Mongolid traits. However, the similarity of the two Lapp groups in most anthropological traits is still extensive.

The Mongolid strains in Europe belong mostly to the *Kumid* subrace of the Altaid race. Some Mongolid elements in northeastern Russia belong to another subrace—the Taigid. The former is very round-headed (brachycephalic), and almost medium tall in stature. The Kumid subrace is very high in the frequency of blood type gene q . The Taigid

subrace is more long-skulled (dolichocephalic) and very short in stature. It is somewhat lower in the frequency of blood type gene *q*. Both Mongolid subraces are thickset, very low-skulled, broad-faced and rather broad-nosed.

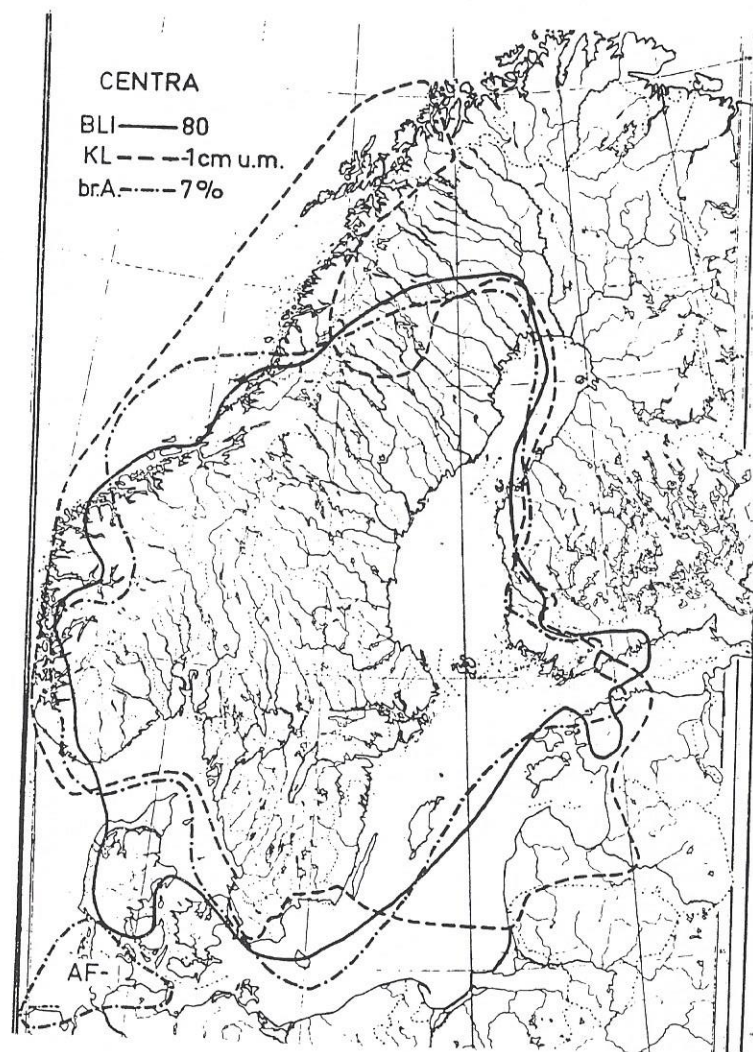
The Races and Peoples of Northwest Europe

We shall now proceed to a brief description of the racial structure of the individual lands of Europe. This covers the oldest time period accurately known to us, the predominantly pre-industrial period of the middle of the nineteenth century, with the national boundaries of that time. The reader must always keep in mind the very summary and often extremely problematic character of this description.

Let us begin with the north of Europe. The nuclear area of the Scando-Nordid race is shown on Map 19. We find strong strains of a rather dark, low-skulled and weakly round-skulled "Alpinoid" race along the Norwegian west coast. This race has just as little relation to the high-skulled and round-skulled Scando-Lappids as the latter do to the Mongolids.

The rest of Norway and Sweden is rather pure Nordic in race, with several local types (*Gau-schlägen*). The local type in the interior of southern Norway is obviously identical with the Faelish subrace. In the most distant corners of Scandinavia, Palaeo-Atlantid strains are found. Here and there on the eastern coast of Sweden East-Baltid strains are also found. Such strains in later times are occasionally found in the interior of Scandinavia—especially in mining regions.

Iceland possesses strong North-Atlantic strains. The islands of Denmark are somewhat less Nordid than the mainland, due perhaps to Alpine admixture. In comparison, the mainland province of Jutland is more Nordid in race. The same is true both now and in earlier times of the Frisian regions in Holland and in northwestern Germany. Moreover, this area is more Faelish, but also shows weak Alpine strains.



MAP 19. NUCLEAR AREA OF THE SCANDO-NORDID RACE (LUNDMAN, 1946). (The lines on the map enclose the nuclear area of this race, apart from some small enclaves: Cephalic Index or Breadth-Length Index (B.L.I.) of the head on the average below 80, stature at most one cm. below the Swedish-Norwegian mean, and at most 7% brown eyes).

Northeastern Germany has a similar racial structure to that of the northwest. However, there are, in addition, south German Alpine strains, which are explainable from the history of German settlement in the East. Furthermore, there are weak East-Baltic strains, which were probably brought about mostly by the Slavs. The relatively low frequency of blood type gene *q* and the high degree of low-skulledness in this part of Germany, however, indicate that the Slavic elements are smaller than has been frequently believed.

The non-Frisian Dutch population is racially more Faelish-Nordic in the north of Holland. In the south of Holland there are weak Mediterranean and Alpine strains. This is also true of the Flemish population in Belgium. In addition, we find Litoral strains in many places on the Atlantic coast of western Europe.

South Germany and Austria are often less Nordic in race, especially in the mountain regions. In the western areas the south Germans and Austrians are more Alpine in race, while in the eastern areas, and also in Alsace, they are often more Dinaric. In the outermost eastern German-speaking regions we find East-Baltic strains with a higher frequency of blood type gene *q*. The Rhine valley and large parts of the Swiss plateau are more Nordic in race. So also is Vienna and its surrounding area in Austria.

Switzerland is divided into several language regions. The earliest inhabitants are of uncertain origin, the Rhaetians in the southeast and the Ligurians in the southwest. The Celtic Helvetii are the oldest tangible substratum of the population. The Helvetii migrated into Switzerland from the northeast. They inhabited the more fertile northern and western parts of the land.

Then came the Romans around the time of Caesar Augustus. They gave the land their language for the time being. After the collapse of the Roman Empire, the Germanic *Allemanni* occupied the northern plain. Another Germanic people, the Burgundians, settled the southwest up to the shore of Lake Geneva. Linguistically, *Allemanni* dialects of the Germanic language family became predominant in the north of

Switzerland. However, around Lake Geneva and in the southeast Romanic daughter-languages continued.

Racially, foreign elements have trickled into Switzerland in later times only in small number, even though this migration has constituted a steady stream due to conditions in the midst of Europe. The most important of these later migrations were the often noble southern French Huguenots. The Huguenots settled down around Lake Geneva in the sixteenth and seventeenth centuries. The strikingly strong strain of tall Mediterraneoids noticeable in this region of Switzerland today can possibly be explained by these late settlements.

However, the German-speaking high-plain region of Switzerland, which from time immemorial has been the core of the land, is still rather Nordic in race. To the southeast of Switzerland, strong Dinaric strains are indicated. In addition, there is an Alpine component in this part of Switzerland, as well as somewhat further to the north. In the Appenzell region a strikingly short-statured Alpine racial island predominates.

The Tessin region which borders northern Italy shows some racial types which appear Armenid-Arabid. Perhaps they entered this area with the Etruscans in ancient times. Furthermore, all of western Switzerland is more brown-haired than the east of the land. The original forest cantons are strikingly gray-eyed. Geneva and Waadt are more long-skulled (dolichocephalic) than the rest of the country.

The British Isles are more Nordic in race in the eastern regions. This is to be expected from the history of settlement of these lands. In parts of the counties of York and Lincoln and in the lowlands of Scotland, the population is just as pronouncedly Nordic in race as in Sweden or Friesland. The poorer parts of Scotland and almost all Ireland become always more North-Atlantid in race toward the west. There are also local survivals of the Palaeo-Atlantid proto-stock. We find Mediterranean strains in the south of Wales, in some heath-regions of southwestern England, and in a few bog-regions in the interior of Ireland. In earlier times marsh

regions were more extensive in these parts of Ireland. Nowadays a higher frequency of blood type gene *q* is found in these areas of Ireland, which may perhaps be correlated with the Mediterranean racial strain.

The Races and Peoples of Southwest Europe

The southwestern "Romanic" quadrant is predominantly Mediterranean-Alpine in race. However, this part of Europe naturally contains many other racial components. The northernmost parts of France are less Alpine than Nordid, and also somewhat Mediterranean, in race. In comparison the Walloonish region of Belgium, which is French-speaking in language, is more Alpine in race.

Northeastern France is more strongly Dinarid, but above all still Nordid-Alpine in race. Central France is predominantly Alpine in race. Western France is a true patchwork of regions predominantly Alpine, Mediterranean, and occasionally also Nordid in race. In the Perigord there is even a region predominantly Berid in race. We find strong North-Atlantid strains in the Celtic province of Brittany. These are partly a result of Britons fleeing from southwestern England in the early Middle Ages. Finally, in southern France the people are mostly Alpine, and along the coast Mediterranean in race.

The Spanish Basques belong predominantly to a Mediterranean subrace, which is also rather closely related to the North-Atlantid subrace of the Nordid race. In particular they are characterized by their athletic body-build or constitution. This is indicated also by the sharp chin and the rather large nose. However, the very pronounced degree of low-skulledness makes it impossible to think in this connection of Dinarid or Litorid strains. The Basques are also characterized by unique serological traits, such as almost no blood type gene *q* and a very high frequency of the Rh-negative blood type. In pigmentation the Basques are not at all homogeneous. In addition, the French Basques contain Alpine

strains. This results in an easily distinguishable local type, *Gautypus*, with almost distended temples.

North Spain is predominantly West-Mediterranid in race, with several local types. There are also Nordid strains, Alpine strains in the Asturian mountain region, and weak Berid strains in Galicia. Northern Portugal resembles Spanish Galicia in anthropological structure. The rest of the Iberian peninsula is principally South-Mediterranid, with Berid strains in the Sierra Nevada region. We find a strong Litorid mixture in a wedge-shaped area in southeastern Spain. The whole southeast Spanish coast forms the base of the wedge, while the point reaches deep into the land. There is also a unique population isolate in the Castilian border region, which unfortunately has still not been comprehensively investigated.

The island of Sardinia is strongly Mediterranean in race and has in the interior many Berid strains. Corsica is mostly Mediterranean. Sicily is similar in anthropological structure. But according to its history it contains a greater mixture of races. These include, among others, Armenids, but also "African" strains, *et al.* Southernmost Italy possesses a similar mixture of races, but with a still strong Mediterranean component. In Campania, which is an old Etruscan colony, we likewise encounter not a few Armenid and also Arabid strains.

Central Italy is a mixture of Mediterranean and Alpine with Nordid and other strains. There are Litorid elements in old Etruria, the Tuscany of today. In this part of Italy we also find a somewhat higher frequency of blood type gene *q*.

Further to the north in Italy we have on the western side around Lucca again an evidently strong island of long-headed Mediterraneans. To the east in the Romagna region we find an East-Alpine—Dinarid mixture. A similar anthropological structure is found in the Po-Valley. This region, however, has a higher frequency of blood type gene *q* than the Romagna region. This may be due to early Etruscan settlements.

In the mountainous areas surrounding the Po-Valley, more Nordid blood is present. This is especially noticeable in the relatively malaria-free regions, situated more than 300 meters above sea level. Finally, a small Mediterranean racial and climatic island is found around Lake Garda.

The Races and Peoples of Southeast Europe

East of the Adriatic Sea lies Yugoslavia. This region is predominantly Dinarid in race. The maximum is attained in the southern part of Yugoslavia, in Herzegovina and still more in Montenegro. Other racial types are found in the poor interior Alpine mountain regions. Toward Austria the frequency of Nordid types increases. In the northeastern part of Yugoslavia East-Baltid and also East-Alpine strains are found. Albania is somewhat less Dinarid than Yugoslavia. Nordid, East-Alpine, and other strains are also present in Albania.

In Greece the Dinarids predominate only in the western part. Toward the northeast more East-Mediterraneans are found. On the Aegean islands we often encounter a rather primitive, dark, long- and low-skulled strain, probably of the Berid race. Likewise there are in Greece blond individuals, both of the Nordid and also the East Baltid race.

Bulgaria and southeastern Macedonia appear to be predominantly East-Mediterranean in race, with still unexplained Pre-Pontic, East-Baltid, and Nordid strains. Only in the western part of Bulgaria are there some Dinarids. The strikingly beautiful classical people of Old Rumania are similar in anthropological structure, although somewhat more Dinarid. The Rumanians of Transylvania show numerous Dinarid, and also East-Baltid as well as Nordid types.

Hungary is probably the most strongly racially-mixed land in Europe. However, it is predominantly East-Baltid—Carpathid in race with Dinarid strains in the western part of the country. In parts of the Pussta region in Hungary, we find rather strong Mongolid strains.

The most striking dark-haired Czechs are East-Baltid,

East-Alpine and Carpathid in race, with Nordid and other strains. With regard to blood groups the Czechs and the Slovaks are not particularly similar to one another. We find a higher frequency of blood type gene *p* in the west among the Czechs and of blood type gene *r* in the east among the Slovaks.

Southwestern Poland shows similar relations. However, the East-Alpine race is predominant in this area. In eastern Galicia the Carpathids predominate, with more Dinarids in the high mountain regions.

In comparison, northern Poland, Lithuania, and the bordering parts of White Russia are somewhat blonder, although also very mixed racially. These lands are thus more East-Baltid-Nordid in race. The boundary between the more blond and the more brunet is apparently rather sharply defined. This boundary follows here in an interesting way approximately the plant-geographical boundary between the marsh-forest in the north and the more open loess lands in the south.

The Races and Peoples of Russia and Northeast Europe

In southwestern Russia the predominantly East-Mediterranean region is continued from the Moldau across to the Black Sea port of Odessa. In this area we find a surprisingly low frequency of blood type gene *q*. Around the Don river there is a region with a similar anthropological structure. Perhaps these are vestiges of the descendants of the Irano-Scythian tribes who inhabited southern Russia in ancient times.

In comparison, the population of the Ukraine proper is tall and round-headed. Likewise, there are as many blonds as brunets. The Ukraine is strongly East-Baltid-Nordid in race, but perhaps very Dinarid as well. The population of central Great Russia is much shorter in stature with coarser and rounder faces. This area is East-Baltid and East-Alpine in race, with Nordid and other strains.

Mongolid strains are only weakly present almost everywhere in European Russia. They are strongest among the Karaite Jews in the Crimea.

Toward the Volga river in eastern European Russia, the Volgid racial strains increase in proportion. In some Volga-Finnish regions the Volgids probably predominate. Here where formerly, and partly still today, countless Tatars lived, we find the beginning of a stronger Mongolid admixture.

Among the Turkic Bashkirs east of the Volga river, the Mongolid component is dominant. However, it is not as strong as it is among the Khirgiz, who live further toward Central Asia. In comparison, the more highly civilized Tatars in southeastern Russia, from the Crimea up to Kazan, are strongly mixed with remnants of the peoples of the Caucasus.

Northeastern Russia is predominantly East-Baltid and Volgid in race. It also has some Nordid and Mongolid strains. Occasionally some Lapp-like types are found in this region. On the White Sea and around Old Novgorod the Nordid strains increase.

In the former Baltic lands, the Estonians are very blond. They have ash-blond-hair and light blue-grey eyes, are mostly tall, and medium to moderately round-headed. For the most part, the Estonians are East-Baltid and Nordid in race, the former more in the east and the latter more in the west of the country. There are some weak, and certainly very ancient, Mongolid traits. These comprise the slanted and flat position of the eyes, coarse hair form, thick and dense skin, a higher frequency of blood type gene q (on the average about 18%) than all surrounding regions, and a surprisingly low frequency of blood type gene p .

The Latvians resemble the Estonians in anthropological structure. However, they are somewhat more round-headed and also somewhat darker in pigmentation. The Latvians show some Dinarid and more East-Mediterranean strains. The latter are concentrated in a remarkable manner in western Courland. Very light, clear-blue eyes, rarely the East-Baltic gray-white-blue eyes, are characteristic of surprisingly

many Livland Latvians, but less so of the Courland Latvians.

In Finland around the turn of the century, the coastal population was in many regions linguistically still purely Swedish. In comparison, the interior was, as always, purely Finnish in language. Racially, the two nationalities were, as so often, somewhat less distinct. Furthermore, the different East-Baltid subraces are prominent among the Finns. These are the Tavastids in the west and the Savolaxids in the east of Finland. The border between these two subraces was up until recently rather sharply defined.

III

THE RACIAL HISTORY OF EUROPE: AN OUTLINE

IN THIS chapter I propose to advance some ideas concerning the history of the origin of the races of Europe. These will concern almost only their later phases—namely from the Neolithic period onward. The earlier times are still largely shrouded in darkness.

The blond Nordid race evidently has its origin in northern Europe—or at least not far to the southeast of this region. However, the Nordic tribes migrated quite early out of their poor homeland into the richer lands of the South. The northerners came as conquerors and colonists. In general, however, they gradually disappeared into the earlier population, which was better adapted to the more southerly environment.

On purely linguistic grounds, the *proto-Indo-Europeans* appear to have originated through the mixture of at least two population-elements (*Volkselemente*), presumably a more southern and a more northern. If this view is correct, then the Indo-European group living furthest to the southeast, the Indo-Iranians, should be derived more from the southeast

proto-element and less from the groups living further to the northwest. Now according to the ancient pictorial and literary representations, the early Indo-Iranians appear to have contained rather little of the blond racial element. In contrast, the rest of the Indo-European peoples appear to have been predominantly blond. Finally—and this is important—this applies also to the *Tocharians*. The Tocharians, who migrated to Central Asia, originally belonged to a western Indo-European group.

According to the ancient portraits, as well as the cranial evidence, the dark element of the early Indo-Europeans must have consisted predominantly of East-Mediterraneans. The blond Indo-European element, which derived from northwest Europe, must have been racially Nordid, if we employ this concept in its broadest sense.

The oldest certain Indo-European crania which we know from Central Germany to the southeast originate from the Stone-Copper-Age and the early Bronze Age. These crania are everywhere in this region always more or less long-skulled and high-skulled. They are not long-skulled and low-skulled like the crania of the living Scando-Nordids. Extremely long and high were the crania of the late Neolithic East German Corded-Ceramic people. The Corded-Ceramic people are generally regarded as a rather important component of the Indo-European core.

We shall briefly survey the anthropological relations in northwest Germany and Scandinavia somewhat before 2000 B.C. This part of Europe nowadays constitutes the nuclear area of the Faelish and Scando-Nordid races. To the northwest of the Corded-Ceramic people, there lived in Germany the Megalith people. The Megalith people of Germany were typically long-skulled and low-skulled, and in relation to face and nose rather Faelish in race. On the Scandinavian peninsula we find among groups, who perhaps had not yet been Indo-Europeanized, likewise long and low crania, but narrower faces and noses.

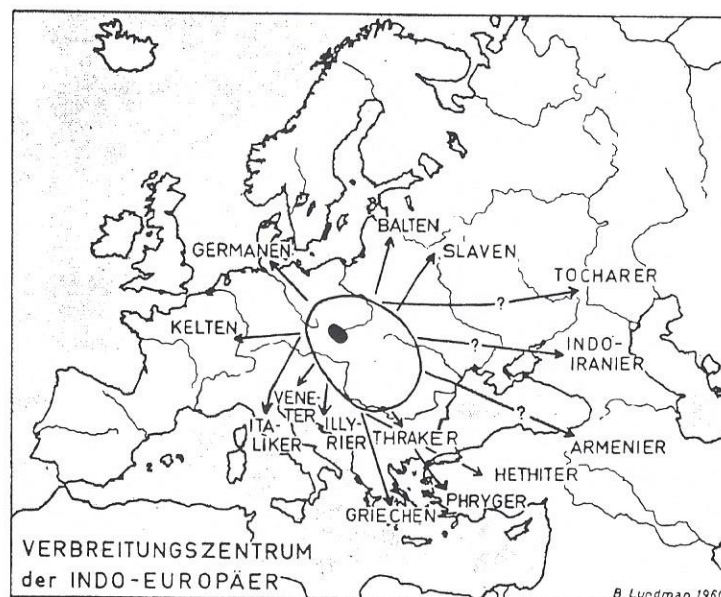
These two groups, the one in northwest Germany and the other in Scandinavia, were thus racially related to one an-

other, as well as to the blond proto-Indo-Europeans. We can perhaps consider the three groups as three subraces of the Nordid race—namely, the Faelish subrace, the Scando-Nordid subrace, and also the long- and high-skulled East-Nordid subrace. The East-Nordid should be regarded as a subrace of the Nordid race, since it resembled the other two subraces in so many anthropological traits. The region of origin of all three subraces evidently bordered on one another.

The racial and cultural position of the West-Indo-Europeans is well illustrated by the blond, long- and high-skulled type. Thereby, their region of origin is restricted to the border land between Central Europe and East Europe. In the earliest times the Indo-Europeans were probably still half-dressed in the summer. Blond men could not have lived long in areas further to the southeast in Europe. This is especially so because at that time the post-glacial dry and warm climate-maximum still continued.

In comparison, high-skulled populations have not penetrated far to the northwest of Europe. We find a rather strong racial and cultural contrast between the Thuringian Corded-Ceramic people and their Megalithic neighbors to the west. This indicates that the former are migrants from southeast Europe. Therefore, one could place the Indo-European homeland in the loess-earth and steppe-forests (at that time) east of Thuringia (see Map 20). On bio-climatological grounds, this Indo-European homeland should not be searched for much more to the east.

This proto-Indo-European East-Nordid race has now almost disappeared. This is evidently a consequence of the forceful—one might say “explosive”—expansion of the Indo-European peoples. Some living high-skulled Nordid types in Poland, Russia, Finland, and the East Baltic region can be derived from the proto-Indo-European East-Nordids. Thus, not all of the living high-skulled peoples of this part of Europe can be regarded as mixtures of the Scando-Nordid (or East-Mediterranean) and East-Baltid (or Dinarid) races. In addition, one must naturally keep in mind the slight blond elements still existing at present among the eastern Indo-



MAP 20. THE FIRST MIGRATIONS OF THE INDO-EUROPEAN PEOPLES (LUNDMAN, ACCORDING TO BOSCH-GIMPERA, 1960). The large ellipse on the map designates the oldest known center of distribution of the Indo-Europeans. The point within the ellipse corresponds to the so-called Moravian portal. The arrows indicate the earliest migration-directions of the different Indo-European groups.

European peoples. This is especially so in the case of the Kurds in northern Mesopotamia. But blond elements also occur further east—up to Kashmir in northwestern India.

The racial history of the Scandinavians after their eventual “Indo-Europeanization” can be briefly summarized as follows. The sharp deterioration in climate in northern Europe from 600 to 400 B.C. drove some of the Scandinavian tribes southward to Germany. In comparison, the migrations of the Anglo-Saxons to England and the Scottish lowlands occurred later in history, beginning around 400 A.D.

The grave-fields of the conquering Germanic tribes in

large parts of Europe at that time show in a striking manner almost only Nordic burials in the older sections. We can recall in this respect the words of Tacitus in his famous work *Germania*. Naturally in the more recent burials, mixtures with the older European populations occur more frequently. The homogeneity of the early Germanic and many other Indo-European peoples was evidently favored by their "blond ideal of beauty" (*blondes Schönheitsideal*).

The Origin of the Races of Europe

Now we shall briefly outline the most important facts known to us of the still older history of the races of Europe. The present geographical distribution of these European races is shown in Map 17. The Palaeo-Atlantids are relatively unmixed and unaltered descendants of the Palaeolithic West European and North African Cro-Magnid race. The Cro-Magnids followed northwards the retreating ice boundary at the end of the Pleistocene. They lived as specialized hunters of the fauna inhabiting this part of Europe.

The Palaeo-Atlantids were never as depigmented as the Faelish and Scando-Nordid tribes who migrated after them. The latter two races have originated from other, later, closely-related Cro-Magnid proto-groups. The Faelids and Scando-Nordids were already at that time racially and culturally somewhat more highly developed. They gradually forced the Palaeo-Atlantids back into their present, barren places of refuge. The North-Atlantid race is probably only a variety of the North race. To be sure the North-Atlantid race is a native race, but more southerly accentuated and more pigmented. This is a result of a less cold, but damper climate and contact with the more pigmented European races.

The southwestern European racial groups—Berids, West-Mediterraneans, and Alpines—evidently originated from shorter-statured and darker Cro-Magnids. These more southerly Cro-Magnids were less adapted to cold climate.

Most of the Berids live in the more unfavorable areas of

southwestern Europe. In part they were forced there by other races. In the case of the Berids, we evidently have before us a more original type.

Hence, the more gracile West-Mediterraneans originated then in the more favorable regions of this part of Europe. Their present overly slender extreme-types are probably entirely late products of the environment. These body types—as in the case of similar types of other of the more slender races—were lacking in their actual rather near-peasant forefathers.

The Alpine race arose only rather late through brachycephalization in the poorer and colder regions of Berids and Berid-mixtures. The origins of this race can be traced back to the Neolithic period. But only in the Middle Ages is the Alpine race more strongly prominent.

The East-Mediterraneans and the East-Alpines have probably originated in an approximately similar manner from East European long-skulled and high-skulled old groups ("*Brunnids*"). These groups probably came across East Europe and southwestern Asia from northwestern—perhaps even central—India in the later Old Stone Age.

The ancestors of the Scando-Lappids, who are at the same time high-skulled and low in the frequency of blood type gene *q*, had probably already become separated at the end of the Ice Age somewhere in eastern Central Europe, possibly in the West Carpathian region. They then followed the retreating ice as hunting tribes of the reindeer and other wild life east of the Baltic Sea. Finally, the proto-Scando-Lappids became domiciled in the northern Scandinavian subpolar region. Consequently, they are also not strongly depigmented.

The Scando-Lappids are reduced in stature and unique in anthropological traits. However, they are not at all Mongolid. At most the Scando-Lappids are a parallel-developed, but very unique, sister-race of the East-Alpines.

In the northeastern portion of their homeland the Lapps have then probably been exposed to stronger Mongolid racial and also cultural influences at some unknown time. These

were mostly of the Taigid race. Thus, have originated the East-Lapps.

The East-Baltid race developed out of the old type closely related to the Volgids. Their region of origin must have been located in a rather cold and frequently clouded region. This would have been close to the Baltic Sea and the depigmentation zone of the Nordic groups.

We find weak, but well-attested, Mongolid traits among the *blondest* East-Baltid groups. These traits show how old—in part before the process of depigmentation—a weak Mongolid admixture must be in northern Russia, from the northeast onward. Evidently, it is much older than the Mongolid admixture in the formerly East-Mediterranean southern Russia. In this part of Russia the present still somewhat weaker frequency of blood type gene *q* shows that the Scythians in antiquity had scarcely any Mongolid strains.

The East-Mediterraneids probably originated in the northern part of southwest Asia. They then spread out northwards to southeast Europe and southern Central Europe. In part this already occurred in the Stone Age. Other branches of this race migrated eastward as far as Central Asia.

The Dinarids and Armenids have originated in a similar manner. These two races have also become brachycephalized only during a later stage of phylogenetic development.

However, we find most certain Armenid types, of almost modern stamping, already among several groups of the very active so-called Bell-Beaker people at the end of the Neolithic period. Perhaps they came as small groups of traders in metals and amber out of the now Armenid northern part of southwest Asia across Spain up to West and Central Europe.

Presumably, the development to Dinarids and to Armenids occurred in parallel. Still, some investigators want to localize a common center of origin in the Balkans, others in Armenia, or even in the Caucasus.

The Carpathids are probably a parallel case to these Bell-Beaker people. They originated from Armenid metal-seekers in mixture with the Pre-East-Alpine older population in

metal-rich northern Hungary. In this case, it must be remembered that the relatively large, somewhat curved nose is inherited as a dominant trait.

We also find some other old, eastern, round-skulled and high-skulled, dark strains, which are higher in the frequency of blood type gene *q*, in some of the coastal regions of West Europe. These strains are our Litorid race (See Map 18). They are approximately equivalent to Deniker's Litoral race. The coastal regions where these strains are found include: the Swedish western coast, northwestern Jutland, the Dutch province of Zeeland, Kent in England, northeastern Scotland (where the frequency of blood type gene *q* reaches almost 10%), the Isle of Man, southwestern Ireland (Valentia), western Wales, Cornwall, and western France (Brittany, Gironde).

There is an especially strong concentration of Litorids in the old mining regions of southwestern Spain. ("Tharsis" on the Rio Tinto is only the ancient name of a modern mine). The Litorids are found deep into the interior of Spain and further east on the south coast around Cadiz and Malaga.

In the Mediterranean Sea region, however, we so strongly approach on the island of Malta and around Naples, Italy the present area of dispersal of the Armenid race that the question is no more of the same interest. Naturally, many descendants of later migrants from the Near East also dwell in the above-named areas.

Peake and Fleure, who dealt with these problems in their ten-volume series *The Corridors of Time*, explained these racial occurrences in terms of seekers of noble metals and also amber coming from the Near East. In part, these migrations took place in the very early Bronze Age. However, at that time the coastal region of the eastern Mediterranean Sea was inhabited almost only by low-skulled and long-skulled Arabids.

Round-skulled and high-skulled Armenids (no one has thought of Dinarids) had just reached the innermost northeastern corner of the Mediterranean Sea in greater number from the northeastern part of the Near East in the

early Bronze Age. This may possibly give an indication that the Armenids brought the art of copper-mining with them to Cyprus from their old home. All this is extremely problematical. Still many of the existing occurrences of Litorid strains in outlying regions of western Europe are not at all explainable through eventual migrations in historical times.

We have previously discussed the similar ancestors of the Carpathids in eastern Central Europe, as well as the Bell-Beaker people of prehistory. These two groups with their almost exclusively inland distribution still were not identical with the Litorids whose forefathers almost always settled near seacoasts. It appears probable that all three groups were only different parts of a great early-metallic culture-stream from the northern Near East.

The Etruscans migrated to Tuscany in Italy from adjacent regions in the Near East on the threshold of history. The Etruscans came to Europe with similar goals. They also were characterized by an anthropological structure similar to the Litorids. The descendants of the Etruscans still survive in great number, especially in the metal-rich southern part of Tuscany. In this part of Italy we find relatively high values of blood type gene *q*.

Synopsis of European Racial History

From the above outline of the history of the origin of the races of Europe, we can determine seven fundamental facts for the racial history of Europe:

1. The probable late-Palaeolithic and Mesolithic (Ice Age and early post-Ice Age) depigmentation in northern Europe.
2. The contrast between the low-skulled Cro-Magnids in western Europe and the higher-skulled Brunnids in eastern Europe, which has existed at least from the Neolithic period onward.
3. The northward migrations in the early Neolithic period by agricultural, more or less, East-Mediterranean tribes out of the Near East into the Danube region up to southern Germany.

4. The southward migrations of the more or less strongly Nordid tribes of Indo-European peoples out of southeasternmost Germany to the north Carpathian region and other areas from the end of the Neolithic period onward.

5. The racially less significant northward migrations of smaller, predominantly noble-metal-seeking groups of traders out of the Near East from the late Neolithic to ancient times.

6. The Central European brachycephalization, which occurred predominantly in the Middle Ages.

7. Refinements in the face and bodily form produced by environmental and hereditary changes at different—and not only recent—times.

The two last-named changes work in part against one another. For if the brachycephalization goes in an “Alpine direction,” it goes against a rounder—and also more round-browed—head. That is, it is to a certain degree an infantilization. But to judge from the anthropological finds, the brachycephalization is associated only to a small degree with a simultaneous infantilization of face and structure of the body. For the “Pre-Alpines” were evidently already rather small-faced and round-faced. (Unfortunately, we know less of their bodies). However, it holds up at least the rather general “linearization” (“*Vershmälerung*”) trend. It probably often results in some physical changes in the reverse direction.

Now we come to very important changes in the peoples of Europe, which are however still little known. Furthermore, through the processes of sifting and selection these changes have brought about a rearrangement of social strata in Europe. They are especially important in this way, so that apparently in part constitutional hereditary factors are often involved here. These can affect the hereditary psychological character of peoples.

We can present as an example just two contrasting counter-types, which are not only simply racial in origin, and still less only phenotypically environmentally conditioned. This is the contrast between the cool, hyper-leptosome, still near-

sinewy, English aristocrat (predominantly Nordic, but still somewhat North-Atlantid or even Litoral mixed, in race) and the industrious, hypomanic, often aesthetic, south German provincial inhabitant.

The increase in stature, especially in northwestern Europe, in the last century is probably almost entirely phenotypical. It is also predominantly a consequence of modern industrial civilization. We shall not consider this phenomenon at this time. There has also been observed in very recent times a reverse trend toward "debrachycephalization."

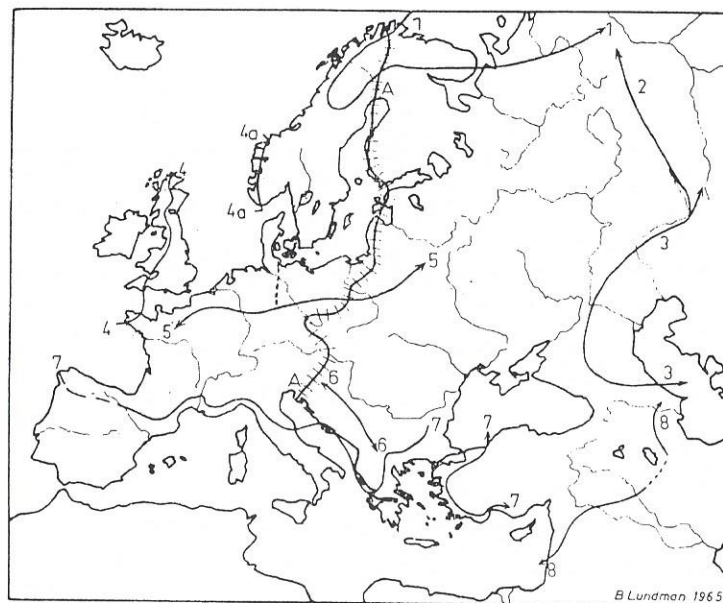
The major racial contrasts in Europe are between the blond North and the brunet South and between the low-skulled West and the high-skulled East. These regional differences have remained approximately the same for several millennia.

The racial structure of the old historical European peoples—the Greeks, Romans, and Celts—has been treated at length in my book *Geographische Anthropologie* (1967). Certainly, these peoples had, at least in their upper social strata, stronger Nordic components than the present inhabitants of these lands. We shall not at this time discuss the racial changes in the peoples of Europe in the Middle Ages and in modern times, apart from what has been presented above.

Europid races are not found exclusively on the continent of Europe. Throughout the entire Near East region of Asia there are almost only races of our Europid or White primary race. Only in India and in the northernmost part of Africa exceed these in more compact measure. We have recognized that the last shaping of these groups—for the most part in their present regions of distribution, or in their vicinity—has resulted from different evolutionary and selective forces (See Map 21).

Geography and the Origin of Races

Thus, almost every racial nuclear region arose out of a unique natural population. But, occasionally one can also speak of the multiple, parallel origin of almost completely



MAP 21. THE APPROXIMATE COINCIDENCE OF RACIAL AND NATURAL BOUNDARIES WITHIN EUROPE (LUNDMAN, 1963—ACCORDING TO DIFFERENT SOURCES).

Natural Boundaries

1. Northern Forest Boundary
2. Boundary of the Western Base of the Ural Mountains
3. Salt-Steppes Boundary
4. Eastern Boundary of Stronger Oceanic Features in Climate
- 4a. " " " " "
5. Loess Belt—North Boundary
6. Alpine Region—East Boundary
7. Northern Boundary of Mediterranean Climate and Vegetation
8. Southern and Eastern Boundary of the Anatolian Mountains
- A. No Features of Climate and Vegetation, but Strongly Pronounced Racial Boundary

Racial Boundaries

1. Mongolid Southern Boundary
2. Mongolid Western Boundary
3. Mongolid Southwestern Boundary
4. West-Atlantid Race Boundary
- 4a. Alpinoid Coastal Region
5. Northern Boundary of Stronger Alpine Admixture
6. Dinarid Race Eastern Boundary
7. Mediterranean Race Boundary
8. Armenid Race Boundary
- A. Western Boundary of Populations with High Skulls and a Higher Frequency of Blood Type B

similar human groups. These groups embraced a series of similar homeland spaces, separated by regions of a different geographical nature and only loosely linked to one another.

In this regard I think above all of the Alpine and Dinaric "mountain-races" ("*Gebirgsrassen*"). However, such mountain regions are situated too distant from one another. In addition, their populations become somewhat less similar to one another. This is as much due to a somewhat different origin, as to later molding.

In this respect I think, for example, of the West-Alpines and the East-Alpines. Another example is the "Taurid" group of races. These comprise the Dinarids, their Caucasian relatives (the "Mtebids"), and the Armenids, who are a little more distantly related to them.

Sometimes such a disjoint distribution has arisen geographico-anthropologically in this way. Consequently, the economic forms of these mountain peoples made easier a migration from mountain region to mountain region rather than settlement in the plains lying in between them. This is demonstrable in the case of the Dinaric groups from the western Balkans to the Carpathians. Naturally the reverse holds for the migrations of Asiatic steppe peoples into the Hungarian Pussta region.

Each of these pronounced natural regions ("Racial breeding-grounds") often retains and maintains its more or less distinct form of man. Of course, one frequently does not know the details of the causes of their particular formation. Chance "early migrations" and later adaptations to the homeland region are involved. Moreover, social selection and sexual selection are also active in these processes of race formation.

The results are, however, clear. The often high frequency of similarly directed genes at different loci is interesting in this respect. An example of this is the strong depigmentation of the Nordid race in skin, hair, and eyes. We also have the enlarged nose of the Taurids in relation to all other parts of the body.

However, a single individual seldom or never attained

even in these places all the highest possible values of the traits. For example, in central Sweden the depigmented individual rarely reached the border of a less life-efficient albinism. Thus, the races are more or less dynamic systems. They are never fully finished. In part, races are only formulations to a development whose completion would be directly harmful, perhaps fatal, to them.

Smaller regional differences naturally have often occurred much later. They can frequently be explained historically through migration. Thus, occasionally we find poorer regions in Europe which are not at all like the usual breeding grounds of groups forced into these areas, such as the interior of Wales, Inner-Sardinia, and Lappland. To the contrary, these other regions were often populated by alien groups only late in history. Examples of such areas are certain sandy-soil regions in northwestern Germany and some bare mountain regions in western France. In the Swedish-Norwegian border-forests, there are besides some very early Palaeo-Atlantids also regions which only around 1600 A.D. were settled by forest-clearing Finns. These Finns mostly came from eastern Finland. Thus, racial geography is a complex, as well as interesting and productive science.

IV

SUMMARY

EUROPE IS THE original homeland of the bulk of the White or Europid race and most of its pronounced subraces. Within this area sufficient data are available to map the geographical distribution of some of the most important anthropological traits and to investigate the causes of these regional variations. In this paper the distribution in Europe of pigmentation, skin color, hair color, and eye color, as well as stature, head form, and blood groups was reviewed and analyzed.

Skin color in Europe varies from dark brown in the south to rosy white in the northwest. Hair color and eye color show parallel regional variations, ranging from light-mixed hair and light eyes across northern Europe to dark hair and dark eyes in the regions bordering the Mediterranean Sea. The peoples of the western areas of Great Britain and Ireland show a much darker pigmentation of the hair than of the skin and eyes, while the opposite pattern is found among many north Russian populations. Pigmentation among the Europid or White race appears to have been extensively adapted to the different climatic conditions found through-

out the continent. The most strongly depigmented Europid races are found in the cool-damp northwest part of the continent.

The distribution of stature in Europe also exhibits regional variations, although not to the same extent as pigmentation. The tallest people in Europe are the peoples of northwest Europe, inhabiting a zone extending from Ireland in the west to Estonia in the east. A second area of tall stature is to be found in northern and central Yugoslavia. The shortest people in Europe are the Scandinavian and Finnish Lapps in the far north of Europe and the inhabitants of the poorer, mountainous regions of south and southwest Europe and the Mediterranean islands, especially Sardinia.

The distribution of stature appears to be partially correlated with living conditions, so that the shorter populations are frequently found in the economically underdeveloped regions of the continent. However, the inhabitants of the poor, mountainous regions of central Yugoslavia are among the tallest people in Europe, if not the world. There has been a pronounced secular increase in stature during the last century in many parts of Europe. This increase has paralleled the rise in living standards in these areas. However, regional differences in stature within nations have been maintained despite the overall increase in stature.

Head form was measured by three indices—the breadth-length index (or cephalic index on the living), the height-length index, and the height-breadth index. Each of these indices shows regional variations throughout the European continent. The breadth-length index shows two zones of long-headedness or dolichocephaly in northwestern and southwestern Europe and a zone of round-headedness across central Europe.

From the Middle Ages through the nineteenth century there has been a pronounced trend toward a greater degree of round-headedness or brachycephaly in many parts of Europe. This is reflected in a higher mean cephalic index or breadth-length index over time in these regions, although in the twentieth century there has been a moderate reversal of

this trend. Environmental, hereditary, and selective factors may be involved in varying degrees in these changes in head form.

The height-length index shows Europe divided into a hypsicephalic or high-skulled East and a chamaecephalic or low-skulled West. The high-skulled zone comprises most of Russia and eastern Europe, the Balkans, Italy and most of Spain. The low-skulled zone includes the British Isles, Scandinavia, the Low Countries, Germany, France, northern Spain, and the Mediterranean Islands. This index appears to be environmentally constant and shows little or no change within historical times. The height-breadth index shows a region of low-broad skulls in western Germany, France, and northern Spain and a region of low-long skulls in southeastern Finland, northeastern European Russia, the eastern Balkans, southern Spain, and the Mediterranean islands.

The geographical distribution of the various blood group systems is of interest to anthropologists as a possible aid in tracing earlier migrations and mixtures of races. Blood groups are completely hereditarily determined, have a known mode of inheritance, and can be translated into gene frequencies. The *p*-gene—for blood type A—attains higher frequencies in Europe than in most other areas of the world. The European maxima are found among the Scandinavian and Finnish Lapps and in west central Spain. Lower *p*-frequencies are found in the Celtic regions of the British Isles (Scotland, Wales, and Ireland) and among the Basques. The *q*-gene—for blood type B—declines in frequency from eastern Europe to western Europe. There is a sharp drop in *q*-values at the Scandinavian-Finnish and German-West-Slavic language boundaries. The *r*-gene—for blood type O—attains its highest frequencies in refuge areas and among peoples in the westernmost parts of Europe—the Basques, Irish, Scotch, and Icelanders. The percentage of Rh-negative individuals is higher than average among the Basques and lower than average among the Lapps and Sardinians.

The values of anthropological traits, such as: pigmentation, stature, cranial height, cephalic index, and blood type gene frequency vary in their geographical distribution

throughout Europe. Correlations among these trait values are also found, resulting in anthropologically distinct regions within the European continent. On this basis, Europe can be divided into four distinct quadrants.

These quadrants comprise: (1) a "Germanic" northwest (characterized by blond pigmentation, rather tall stature, long and low skulls, and a low frequency of blood type B); (2) a "Romanic" southwest (characterized by brunet pigmentation, shorter stature, low skulls—but variable breadth-length relations, and also a low frequency of blood type B); (3) a Balkan southeast (characterized by brunet pigmentation, variable stature, high skulls—but variable breadth-length relations, and a moderately higher frequency of blood type B); and (4) a "Slavo-Finnic" northeast (characterized by variable pigmentation and stature, high skulls and moderately round skulls, and a high frequency of blood type B).

The White or Europid primary race is divided into a number of distinct races and subraces. These are defined on the basis of combinations of anthropological traits, such as: body form, facial form, nasal form, pigmentation (hair color, eye color, and skin color), cranial form (breadth-length, height-length, and height-breadth indices), stature, and blood type gene frequency. The races of Europe derived in this manner comprise: the Palaeo-Atlantid, the Nordid (with North-Atlantid, Faelish, and Scando-Nordid subraces), the Taurid (with Dinarid, Armenid, and Mtebid subraces), the Carpathid, the Berid, the West-Mediterranean, the East-Mediterranean, the Volgid, the East-Baltid, the East-Alpine, the West-Alpine, and the Scando-Lappid.

Each of the above races or subraces is generally predominant in a specific region of Europe. Ancient and modern migrations, however, have spread many of these races outside of their original homeland. Consequently, each European nation or people is characterized by its own unique anthropological structure—i.e., frequency distribution of the various races and subraces. These structures were briefly outlined and described for the different nations and peoples of Europe.

The origins of the races of Europe can be traced back to

the end of the last Ice Age and the beginning of the succeeding Mesolithic period. The retreating ice cover opened up for settlement new areas of Europe. Changing climate, expanding area of settlement, and more varied habitat provided the selective forces for differentiating and molding the living races of Europe.

The descendants of the West European and North African Cro-Magnid race followed the retreating ice into western and northern Europe. The earliest migrants were the Palaeo-Atlantids, followed by the Faelish and Scando-Nordids. The depigmentation of the Faelish and Scando-Nordid races appears to have occurred as an adaptation to the cold and cloudy climate of northern Europe. The East Baltid race in adjacent areas of northeastern Europe also became strongly depigmented or blond. In the warmer and damper northwest of Europe, however, the Palaeo-Atlantid and North-Atlantid races became only partly depigmented. Thus, arose the contrast between the blond North and the brunet South of Europe which has existed for several millennia.

The southwestern European races—the Berids, West-Mediterraneans, and Alpines—evidently originated from shorter-statured and darker Cro-Magnids. These races were less adapted to cold climate. The origins of the brachycephalic Alpine race can be traced back to the Neolithic period. However, the Alpine race only became prominent in the later Middle Ages of Europe.

The East-Mediterranean and East-Alpine races probably developed from the long-skulled and high-skulled Upper Paleolithic races of southeastern Europe and the Near East. These races also moved northward into central and eastern Europe in the early Neolithic period. They were preceded by the related, but shorter-statured Scando-Lappids, who followed the retreating ice northeastward as specialized reindeer hunters. These races of eastern Europe, together with the blond East-Baltids and the brunet Volgids, are all high-skulled. Thus, arose the second major racial contrast in Europe—between the low-skulled West and the high-skulled East—which has remained virtually constant for several millennia.

The Dinarids and the Armenids arose in the northern part of southwestern Asia and later became brachycephalized. The expansion of these races to other parts of Europe, together with the Litorid settlements in northwestern Europe, may be a result of later migrations of prospectors and mining specialists in the late Neolithic and early Bronze Ages.

In the late Neolithic and early Bronze Age, the proto-Indo-European culture arose in Central Europe. The southeasternmost Indo-European group—the Indo-Iranians—seem to have been basically East-Mediterranean in race. The other Indo-European groups, however, appear to have been predominantly blond and Nordid in race. From the early Bronze Age onward, southward migrations took place of blond Indo-European peoples from Central Europe and the northern Balkans into the southern Balkans and Mediterranean region. These migrations gave to Europe virtually all of its present languages, its mythology and culture, and its basic social structure.

SYSTEMATIC APPENDIX: THE RACES OF EUROPE

EUROPID OR WHITE PRIMARY RACE: Thin to medium-thick, mostly more-or-less light *skin*. Soft, smooth to wavy or curly *hair* and generally a stronger growth of beard. A rather narrow nose and generally thin lips. Types of body build: mostly juvenile (virile) and boreal, occasionally mature.

A. Caspid Southeastern High-Skulled Racial Group.

I. More boreal body build.

a) Face somewhat protomorphic.

1. Eye sockets often somewhat slanted. More-or-less high in frequency of blood type gene *q*.

+ *Volgid Race*: dark pigmented, very short-statured, thickset, long- to medium-skulled.

++ *East-Baltid Race*: very light pigmented, taller, however thickset, round-headed with flat occiput. Eyes often situated somewhat flat in the face. Two subraces in this area of Europe.

2. Eyes direct, large upper iris: *Pre-Pontid Race* (extinct).

b) Face almost infantile.

1. *Scando-Lappid Race*: very short-statured, with very low face and round skull, rather dark pigmented. Very low frequency of blood type gene *q* and very high frequency of blood type gene *p*₂. Also very unique in other serological traits.

2. *East-Alpine Race*: Similar, but less pronounced, traits. Much higher frequency of blood type gene *q*.

II. Progressive Procopomorphic Types—All Extremely Long-Skulled.

- a) *East-Mediterranean Race*: dark pigmented, with many subraces.

1. *The Pontid* (in southern Russia).

2. *The Iranid*: partly influenced by the Arabid race, with narrow rectangular face.

3. *The North-Indid*: very tall, heavily bearded, large nose, and a high frequency of blood type gene *q*.

4. *The Gangid*: small, very gracile, with thin, sparse beard, and a high frequency of blood type gene *q*.

5. *The Nesid* (in the South Seas).

6. *The Saharid* or South-Mediterranean (in North Africa): rather tall and gracile, with a low frequency of blood type gene *q*.

7. *The Aegyptid*: very closely related to the Saharid, but with a high frequency of blood type gene *q*.

- b) *The East-Nordid Subrace* (of the low-skulled, fair North Race): similar to this North race in anthropological traits (almost disappeared through crossing).

III. *Taurid Race*: mature-boreal, with very high and round skull, very flat occiput and larger nose. At least two subraces: the very tall *Dinarid* with short arms and the mature-boreal, medium-sized *Anatolid* or *Armenid* (and the somewhat less pronounced *Mtebid*, with a very low frequency of blood type gene *q*, in the Caucasus).

B. Atlantid Northwestern Low-Skulled Racial Group (Always With Low Frequencies of Blood Type Gene *q*).

I. Long-Skulled (Dolichocephalic).

- a. *Palaeo-Atlantid Race*: somewhat protomorphic, broad-nosed, very broad-faced, tall and robust, light-mixed in pigmentation. Low in the frequency of blood type gene *p* and high in blood type gene *r*.

- b. *Nordid Race*: virile, more progressive, lighter in pigmentation. Three subraces: the broader-faced, more robust *Faelish* (Faelo-Nordid) subrace, the narrower-faced, more slender *Scando-Nordid*

subrace, and the *North-Atlantid* subrace which is morphologically similar to the Scando-Nordid. The first two subraces are rather light-haired, while the North-Atlantid subrace is more dark-haired but at the same time light-eyed. The North-Atlantid subrace also has a higher frequency of blood type gene *r* and a lower frequency of *p* than the other two subraces.

- c. Southern, Dark-Pigmented, Short-Statured Group:
 1. *Berid Race*: more infantile-puerile, with low frequencies of blood type genes *p* and *q*.
 2. Juvenile.
- + *West-Mediterranean Race*: horizontal eye-socket, with a more virile Basquid subrace. The ABO-allelic relationships, and also the Rh-system, are very unique in several ways in this subrace.
- ++ *Arabid Race*: slanted eye-socket and almond eyes. Differentiated from the preceding races in facial morphology and facial dynamics. Also a very narrow and sloping forehead, with a distinct rhombic-shaped face. A *Syrid* subrace, with a lower frequency of blood type gene *r*.
- II. Round-Skulled (Brachycephalic): *West-Alpine Race*, infantile-boreal.

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